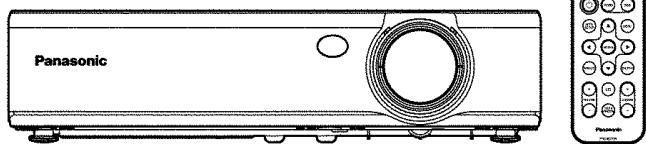


# Service Manual

LCD Projector



**PT-LB20NTU  
PT-LB20NTE  
PT-LB20NTEA  
PT-LB20U  
PT-LB20E  
PT-LB20EA  
PT-LB20SU  
PT-LB20SE  
PT-LB20SEA  
PT-LB20VU  
PT-LB20VE  
PT-LB20VEA**

**Panasonic**

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The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

## Specifications

<b>Power supply:</b>	100 V - 240 V AC, 50 Hz / 60 Hz	<b>VD:</b>	TTL, automatic positive/negative polarity compatible
<b>Power consumption:</b>		<b>VIDEO IN:</b>	Single-line, RCA pin jack 1.0 V [p-p], 75 Ω
220 W [During standby (when fan is stopped): Approx. 4 W]		<b>S-VIDEO IN:</b>	Single-line, Mini DIN 4-pin Y 1.0 V [p-p], C 0.286 V [p-p], 75 Ω,
<b>Amps:</b> 2.5 A - 1.3 A		<b>AUDIO IN:</b>	Single-Line, RCA pin jack × 2 (L-R) 0.5 V [rms]
<b>LCD panel:</b>		<b>SERIAL:</b>	DIN 8-pin RS-232C compatible
Panel size (diagonal): PT-LB20NT**/LB20**/LB20S**: 0.7 type (17.78 mm)		<b>Cabinet:</b>	Molded plastic (PC/ABS)
PT-LB20V**: 0.6 type (15.24 mm)		<b>Dimensions:</b>	Width: 297 mm Height: 73 mm Length: 210 mm
Aspect ratio: 4:3		<b>Weight:</b>	PT-LB20NT**: 2.2 kg PT-LB20**/LB20S**/LB20V**: 2.1 kg
Micro lens array: Available		<b>Operating environment:</b>	Temperature: 0 °C - 40 °C (when FAN CONTROL is set to "HIGH" 0 °C - 35 °C)
Display method: 3 transparent LCD panels (RGB)			Humidity: 20 % - 80 % (no condensation)
Drive method: Active matrix method		<b>Certifications:</b>	PT-LB20NTU, LB20U, LB20SU, LB20VU: UL60950, C-UL, FCC Class B
Pixels:	PT-LB20NT**/LB20**/LB20V**: 786 432 (1 024 × 768) × 3 panels		PT-LB20NTE/EA, LB20E/EA, LB20SE/EA, LB20VE/EA: EN60950, EN55022, EN61000-3-2, EN61000-3-3, EN55024
PT-LB20S**: 480 000 (800 × 600) × 3 panels		<b>&lt;Remote control unit&gt;</b>	
<b>Lens:</b>	Manual zoom (1 - 1.2) / Manual focus PT-LB20NT**/LB20**/LB20V**: F 1.7 - 1.9, f 21.5 mm - 25.8 mm	<b>Power supply:</b>	3 V DC (Lithium CR2025 battery × 1)
	PT-LB20S**: F 1.8 - 2.1, f 22.0 mm - 26.2 mm	<b>Operating range:</b>	Approx. 7 m (when operated directly in front of signal receptor)
<b>Lamp:</b> UHM lamp (155 W)		<b>Dimensions:</b>	Width: 40 mm Height: 86 mm Length: 6.5 mm
<b>Luminosity:</b>	PT-LB20NT**/LB20**/LB20S**: 2 000 lm PT-LB20V**: 1 600 lm	<b>Weight:</b>	18 g (including battery)
<b>Scanning frequency (for RGB signals):</b>	Horizontal scanning frequency: 15 kHz - 91 kHz Vertical scanning frequency: 50 Hz - 85 Hz Dot clock frequency: 100 MHz or less	<b>Accessories:</b>	
<b>YPbPr signals:</b>	480i, 480p, 576i, 576p, 1 080/60i, 1 080/50i, 720/60p	<b>Card Remote control unit (N2QADC000008):</b>	1
<b>Color system:</b>	7 (NTSC / NTSC 4.43 / PAL / PAL-M / PAL-N / PAL60 / SECAM)	<b>Lithium battery for remote control unit (CR2025) : 1</b>	
<b>Projection size:</b>	838.2 mm - 7 620 mm	<b>Power cord:</b>	PT-LB20NTU/LB20U/LB20SU/LB20VU: K2CG3DR00006 1
<b>Throw distance:</b>	PT-LB20NT**/LB20**: 1.1 m - 10.7 m PT-LB20S**: 1.1 m - 11.0 m PT-LB20V**: 1.4 m - 12.7 m		PT-LB20NTE/LB20E/LB20SE/LB20VE: K2CM3DR00002 (continental) 1
<b>Optical axis shift:</b>	PT-LB20NT**/LB20**/LB20S**: 6:1 (fixed) PT-LB20V**: 12:1 (fixed)		PT-LB20NTEA/LB20EA/LB20SEA/LB20VEA: K2CT3DR00005 (U.K.) 1 K2CM3DR00002 1
<b>Screen aspect ratio:</b> 4:3		<b>RGB signal cable [K1HA15DA0002 (1.8 m)]:</b>	1
<b>Installation:</b>	Front / Rear / Ceiling / Desk (Menu selection)	<b>CD-ROM (TQBH9007) (PT-LB20NT** only):</b>	1
<b>Speakers:</b> 4.0 cm × 3.0 cm oval × 1		<b>Carrying bag (TPEP013):</b>	1
<b>Max. useable volume output:</b>	1 W (monaural)	<b>Options:</b>	
<b>Wireless LAN (PT-LB20NT** only):</b>	IEEE802.11b/g	<b>Ceiling bracket:</b>	ET-PKB30
<b>Connectors:</b>		<b>Wireless remote control unit:</b>	ET-RM300
<b>RGB IN / OUT:</b> Dual-line, D-sub HD 15-pin (female)	(One line is available for input and output, selectable using an on-screen menu)	<b>Serial adapter (DIN 8-pin/D-sub 9-pin):</b>	ET-ADSER
During YPbPr input/output:			
Y: 1.0 V [p-p] (Including sync), 75 Ω			
PbPr: 0.7 V [p-p], 75 Ω			
During RGB input/output:			
RGB: 0.7 V [p-p], 75 Ω			
G.SYNC: 1.0 V [p-p], 75 Ω			
HD : TTL, automatic positive/negative polarity compatible			

## **⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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- S-VGA is a registered trademark of the Video Electronics Standards Association.

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### CAUTION

#### Lithium Battery

**Risk of explosion if battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.**

(See also Operating Instructions.)

### Precaution

If using of this projector at high elevations (above 1 400 m), set FAN CONTROL to HIGH. (Refer to "Option settings" in Operating Instructions.)

Failure to observe this may cause malfunctions.

Never use this projector at an elevation of 2 700 m or higher.

Using this projector at high elevations, consult your dealer or Authorized Service Center about preparations.

## About lead free solder (PbF)

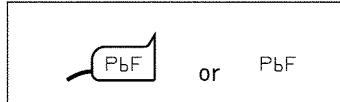
This projector is using the P.C.Board which applies lead free solder. The use of lead free solder is recommended from the standpoint of antipollution for the global environment in service.

Notes:

- Lead free solder: Sn-Ag-Cu (tin, silver and copper) has a higher melting point (approx. 217°C) than standard solder. Typically, the melting point is 30°C to 40°C higher. When servicing, use a high temperature soldering iron with temperature limitation function and set it to  $370 \pm 10^\circ\text{C}$ .
- Be precautions about lead free solder: Sn-Ag-Cu (tin, silver and copper) will tend to splash when heated too high (approx. 600°C or higher).
- Use lead free solder for the P.C.Board (specified on it as "PbF") which uses lead free solder. (When you unavoidably use lead solder, use lead solder after removing lead free solder. Or be sure to heat the lead free solder until it melts completely, before applying lead solder.)
- After soldering to double layered P.C.Boards, check the component side for excess solder which may flow onto the opposite side.

About the identification of the lead free solder P.C.Board

For the P.C.Board which applies lead free solder, the symbol as shown in the figure below is printed or stamped on the surface or the back of P.C.Board.



For US

## **IMPORTANT SAFETY NOTICE**

There are special parts used in Panasonic LCD Projectors which are important for safety. These parts are shaded on the schematic diagram. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY.

### WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**CAUTION:** Any unauthorized changes or modifications to this equipment will void the users authority to operate.

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# 1 Safety Precautions

## 1.1. General Guidelines

- For continued safety, no modification of any circuit must be attempted.
- Unplug the power cord from the power outlet before disassembling this projector.
- It is advisable to use an isolation transformer in the AC power line before the service.
- Observe the original lead dress during the service. If a short circuit is found, replace all the parts overheated or damaged by the short circuit.
- After the service, all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations must be properly installed.
- After the service, check the leakage current to prevent the customer from getting an electric shock.

## 1.2. Leakage Current Check

- Prepare the measuring circuit as shown in Fig.1.

Be sure to use a voltmeter having the performance described in Table 1.

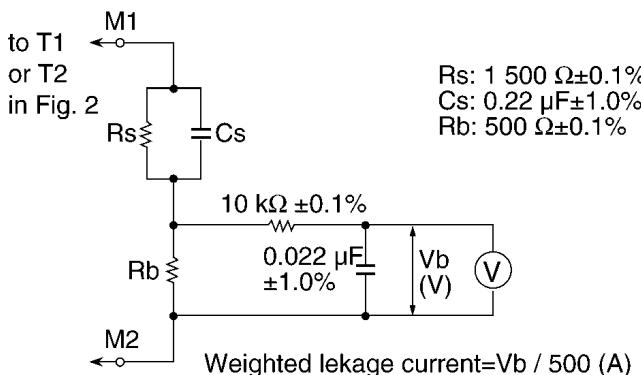


Fig. 1

3. Connect M1 to T1 according to Fig. 2 and measure the voltage.

4. Change the connection of M1 from T1 to T2 and measure the voltage again.

5. The voltmeter must read 0.375 V or lower in both of steps 3 and 4. This means that the current must be 0.75 mA or less.

6. If the reading is out of the above standard, the projector must be repaired and rechecked before returning to the customer because of a possibility of an electric shock.

## 1.3. UV Precaution and UHM Lamp Precautions

- Be sure to unplug the power cord from the power outlet when replacing the lamp.
- Because the lamp reaches a very high temperature during its operation, wait until it cools completely when replacing the Lamp Unit.
- The lamp emits small amounts of UV-radiation, avoid direct eye contact with the light.
- Because the high pressure lamp involves a risk of failure, never touch the lamp wire lead during the service. (See Fig. 3)

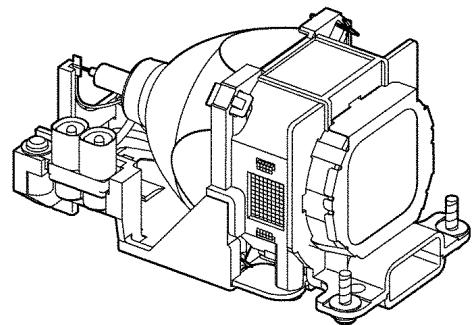


Fig.3

	Performance
Voltmeter (rms reading)	Accuracy: $\leq 2\%$ Input resistance: $\geq 1\,\text{M}\Omega$ Input capacitance: $\leq 200\,\text{pF}$ Frequency range: 15 Hz to 1 MHz

Table 1

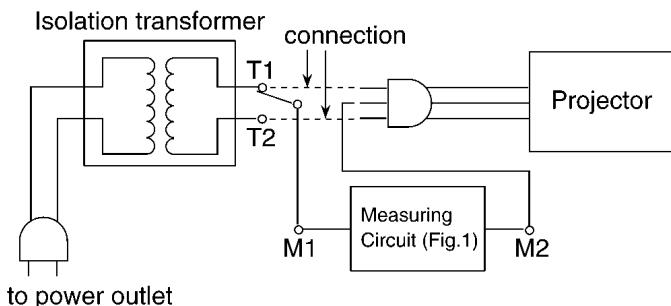


Fig. 2

- Assemble the circuit as shown in Fig. 2. Plug the power cord in a power outlet.

## 2 Ext Option

This projector has EXT OPTION in addition to standard on-screen menus.

- There are SELF CHECK and SERVICE MODE for service, etc.

### 2.1. Procedure to enter EXT OPTION

1. Press "MENU" button on the main unit or remote control unit to display "MENU" screen, then select "OPTION" and press "ENTER" button.

2. Select "OSD" on "OPTION" menu and press "ENTER" button 3 seconds or longer.

MENU → OPTION → OSD

### 2.2. EXT OPTION Menu and Functions

EXT OPTION

FREEZE MSG	OFF / ON
ANGLE RESET	OFF / ON
FAN FULLMODE	OFF / ON
AUTO SETUP	STANDARD / SPECIAL
SYNC	STANDARD / SPECIAL
SELF CHECK	
SERVICE MODE	
FLICKER ADJ	

#### • FREEZE MSG

Switching ON/OFF "FREEZE" on-screen display

#### • ANGLE RESET

Switching ON/OFF "AUTO KEYSTN (Automatic Keystone)" reference level setting

**Note:**

- Normally, do not select. (Angle reset data will be rewritten.)

#### • FAN FULLMODE

Setting the cooling fan motor rotation speed

- Switching ON "FAN FULLMODE", the rotation level of the fan becomes high-speed rotation (fixed). Moreover, when "FAN FULLMODE" is ON, changing "FAN CONTROL" in OPTION becomes impossible (setting FAN FULLMODE is given priority more than FAN CONTROL).

#### • AUTOSETUP

Setting AUTO SETUP mode

- STANDARD: To set the normal mode (the dot clock is adjusted strictly))
- SPECIAL: To set the special mode (the dot clock is adjusted roughly)

**Note:**

- Do not change the initial setting (STANDARD).

#### • SYNC

Setting SYNC processing mode

- STANDARD: To set the normal mode
- SPECIAL: To set the special mode (noise reduction mode)

**Note:**

- Do not change the setting when it is possible to receive normally.

Change the setting only when the image is not displayed normally because of the sync signal noise of connected equipment.

#### • SELF CHECK

To enter the self-check mode

#### • SERVICE MODE

To enter the service mode

- FLICKER ADJ

To enter the flicker adjustment mode

## 2.3. Canceling EXT OPTION

Press "MENU" button on the main unit or remote control unit.

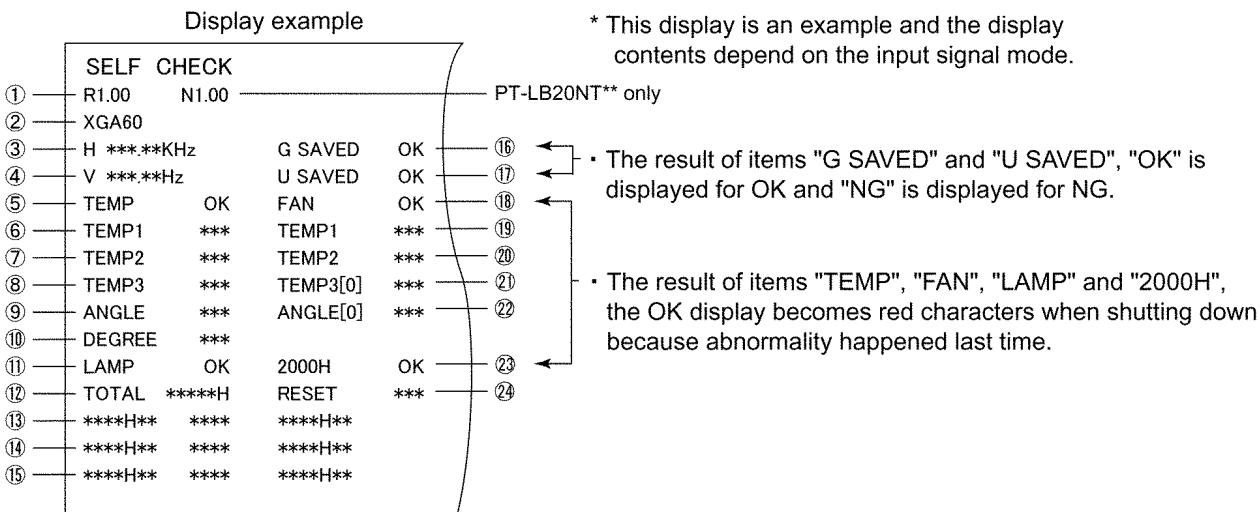
# 3 Self-Check Mode

This mode is used to narrow down the location of the failure.

## 3.1. Procedure to enter the self-check mode

Select "SELF CHECK" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

### 3.2. Self Check Display and Contents



	Display Contents	Remarks
①	Microcomputer Version Display	Software Version
②	Resolution Name	Different display according to the input signal
③	Horizontal Signal Frequency	RGB or YPbPr signal reception only
④	Vertical Signal Frequency	
⑤	Temperature Abnormality Check	Cause of Lamp Malfunction
⑥	Thermosensor 1 Measurement Value <sup>*1</sup>	Around Air Outlet (A/D conversion value: 0 - 255)
⑦	Thermosensor 2 Measurement Value <sup>*1</sup>	Around Air Inlet (A/D conversion value: 0 - 255)
⑧	Thermosensor 3 Measurement Value	Around Tilt Sensor (A/D conversion value: 0 - 1 023)
⑨	Tilt Sensor Measurement Value	Voltage Value (0.00 - 3.30)
⑩	Tilt Degree <sup>*2</sup>	Degree of tilt of the projector, that is a value by which temperature correction is given to the tilt sensor A/D conversion value. (When automatic keystone, the keystone distortion is corrected with this value.)
⑪	Lamp - Abnormality Check	Cause of Lamp Malfunction
⑫	Total Usage Time	Projector Cumulative Usage Time
⑬	Lamp ON - Cumulative Usage Time / Frequency / Cumulative Usage Time	Current
⑭		Second
⑮		First
⑯	Gamma Correction Data Check	It is distinguished whether gamma data is stored in the flash ROM.
⑰	Color Unevenness Correction Data Check	It is distinguished whether color unevenness correction data is stored in the flash ROM.
⑱	Fan Stop Check	Cause of Lamp Malfunction
⑲	Thermosensor 1 Measurement Value <sup>*1</sup>	Temperature around the air outlet when the last thermal shutdown occurs
⑳	Thermosensor 2 Measurement Value <sup>*1</sup>	Temperature around the air inlet when the last thermal shutdown occurs
㉑	Thermosensor 3 Reference Value	Thermosensor 3 A/D Conversion Value (0 - 1 023) at angle reset
㉒	Tilt Sensor Reference Value	Tilt Sensor Voltage Value (0.00 - 3.30) at angle reset
㉓	Lamp - Judgment for Cumulative Usage more than 2 000 h <sup>*3</sup>	Judgment for Replacement Time of Lamp
㉔	Lamp - Reset Frequency of Cumulative Usage Time	Reset Frequency (0 - 255)

<sup>\*1</sup> When detected abnormal temperature (high temperature around the air inlet and/or outlet ports, large difference between temperature around the air inlet/outlet ports), TEMP indicator turned on. If arriving at the critical temperature, the power supply will be shutdown automatically and the indicator will flash.

<sup>\*2</sup> When "AUTO KEYSTN (Automatic Keystone)" is set to ON, the keystone distortion is corrected automatically with this value during automatic setup.

<sup>\*3</sup> Warning of the lamp cumulative usage time and shutdown use the conversion time for 155 W.

### 3.3. Canceling the self-check mode

Press "MENU" button on the main unit or remote control unit.

## 4 Service Mode

This mode is used to display seven kinds of test patterns [Horizontal lines, Vertical lines, Dots, Crosshatch, White cross, Black cross and White (No pattern)] in the four colors (White, Red, Green and Blue)..

**Note:**

- On the service mode, displays above patterns by each color without test equipment such as PC or SG. Use the service mode for simplified adjustments by your eyes and so on.

### 4.1. Procedure to enter the service mode

Select "SERVICE MODE" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

**Note:**

- In the service mode, pressing the up-arrow "▲" or down-arrow "▼" button allows the test pattern selection and the left-arrow "◀" or right-arrow "▶" button the color selection (White / Red / Green / Blue).

### 4.2. Canceling the service mode

Press "MENU" button on the main unit or remote control unit.

## 5 Flicker Adjustment Mode

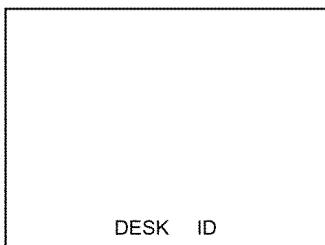
If replacing the optical parts (Analysis / LCD / Lens block) of this projector and/or A-P.C.Board (assembly), enter the flicker adjustment mode and minimize the flicker.

### 5.1. Procedure to enter the adjustment mode

Select "FLICKER ADJ" on "EXT OPTION" menu and press "ENTER" button on the main unit or remote control unit.

**Note:**

"DESK setting (blue)" is displayed when entering the adjustment mode.



Adjustment Display when DESK setting

### 5.2. Adjustment Display and Contents

- Setting value is increased and decreased with the right-arrow "▶" and left-arrow "◀" buttons.  
"◀": Decrease, "▶": Increase  
– Adjust the setting value to minimize the flicker on the screen.  
– Execute the adjustment by 6 patterns below.
- The pattern (adjustment display) is switched with the up-arrow "▲" and down-arrow "▼" buttons.  
"▲": Forward direction, "▼": Reverse direction  
– There are 6 patterns of "DESK setting (blue)", "DESK setting (red)", "DESK setting (green)", "CEILING setting (blue)", "CEILING setting (red)" and "CEILING setting (green)".  
– The setting value is saved into this projector when the pattern is switched.

### 5.3. Canceling the flicker adjustment mode

Press "MENU" button on the main unit or remote control unit.

**Note:**

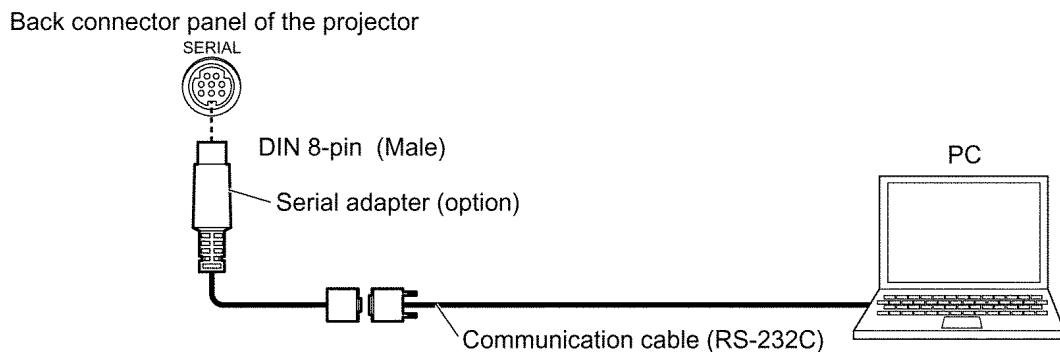
When "MENU" button is pressed, the setting value at that time is saved into this projector and the adjustment mode is canceled.

## 6 Using the SERIAL Connector

The serial connector which is on the back connector panel of the projector conforms to RS-232C standard. This projector can be controlled by a PC which is connected as shown in "6.1. Connection".

For controlling this projector by a PC, requires communication software on the market, and inputs control commands according to communication settings and basic format below.

### 6.1. Connection

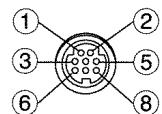


**Note:**

Use a proper communication cable which is suitable for the PC to connect the optional serial adapter, which is connected with SERIAL connector of this projector, and the PC.

### 6.2. Pin Layout and Signal Names for SERIAL Connector

DIN 8-pin (female)  
seen from outside



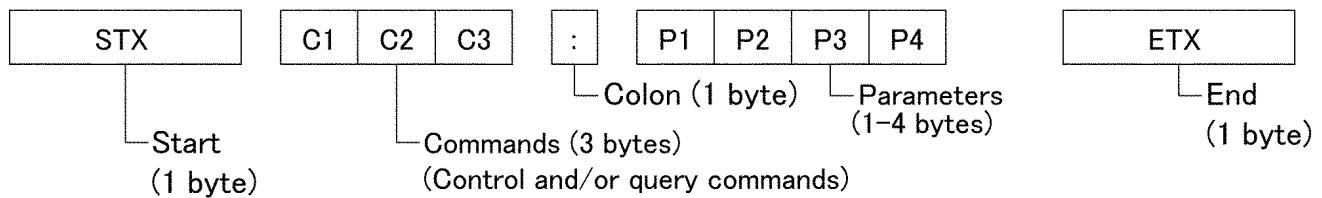
Pin No	Signal Name	Contents
3	RXD	Receive data
4	GND	Ground
5	TXD	Transmit data
1	---	Connected internally
2	---	
6	---	
7	---	NC
8	---	NC

### 6.3. Communication Settings

Signal Level	Contents	Description
Sync. method	Conforms to RS-232C standard	Asynchronous
Baud rate		9 600 bps
Parity		None
Character length		8 bits
Stop bit		1 bit
X parameter		Not used
S parameter		Not used

## 6.4. Basic Format

The data sent from the PC to the projector is transmitted in the format shown below.



### Notes:

- If sending multiple commands, check that a call back has been received from the projector for 1 command before sending the next command.
- When a command which does not require parameters is sent, the colon (:) is not required.

## 6.5. Control / Query Commands

### Control Commands

Command Name (Parameter format is shown in <>)	Function / Contents	Call back from Projector (Parameter format is shown in <>)	Minimum Value of Parameter	Maximum Value of Parameter
PON *1	POWER ON	PON	—	—
POF *1	POWER OFF	POF	—	—
AVL :<pl>	VOLUME	AVL :<pl>	0	63
IIS :<input signal>	INPUT SELECT	IIS :<input signal>	—	—
OST	STANDARD	OST	—	—
OFZ :<off_on>	FREEZE	OFZ :<off_on>	0	1
OEN :	ENTER	OEN	—	—
VPM :<picture mode> <NAT> <STD> <DYN> <BBB>	PICTURE MODE NATURAL STANDARD DYNAMIC BLACK-BD	VPM :<picture mode> <NAT> <STD> <DYN> <BBB>	—	—
AUU	VOLUME UP	AUU	—	—
AUD	VOLUME DOWN	AUD	—	—
OMN	MENU	OMN	—	—
OCU	CURSOR UP	OCU	—	—
OCD	CURSOR DOWN	OCD	—	—
OCL	CURSOR LEFT	OCL	—	—
OCR	CURSOR RIGHT	OCR	—	—
OAS	AUTO SETUP	OAS	—	—
OSH *1	SHUTTER	OSH	—	—
OIX	INDEX WINDOW (Double)	OIX	—	—
DZU	D.ZOOM UP	DZU	—	—
DZD	D.ZOOM DOWN	DZD	—	—
OLP :<lamp power> *1 *2	LAMP POWER	OLP :<lamp power>	0	1

\*1 Do not transmit the PON, POF, OSH and/or OLP commands continuously in a short time.  
The lamp may be damaged and/or cause malfunctions.

\*2 The OLP command is invalid at a no signal.

## Query Commands

Query Command	Contents	Call back from Projector (Parameter format is shown in < >)
QPW	POWER CONDITION	<power condition>
QIN	INPUT SIGNAL	<input signal>
QAV	VOLUME LEVEL	<pl>
QVC	COLOR LEVEL	<pl>
QVT	TINT LEVEL	<pl>
QVB	BRIGHT LEVEL	<pl>
QVR	CONTRAST LEVEL	<pl>
QVS	SHARPNESS LEVEL	<pl>
QWR	WHITE BALANCE LEVEL (RED)	<pl>
QWG	WHITE BALANCE LEVEL (GREEN)	<pl>
QWB	WHITE BALANCE LEVEL (BLUE)	<pl>
QHP	H-POSITION LEVEL	<pl>
QVP	V-POSITION LEVEL	<pl>
QCP	COLOR PHASE LEVEL	<pl>
QDC	DOT CLOCK LEVEL	<pl>
QSP	INSTALLATION	<installation>
QLG	LANGUAGE	<language>
QPM	PICTURE MODE	<NAT>=NATURAL <STD>=STANDARD <DYN>=DYNAMIC <BD>=BLACK-BD
QFZ	FREEZE	<off_on>
QLP	LAMP POWER	<lamp power>
Q\$L	LAMP ON TIME	<acctch>
QSH	SHUTTER	<off_on>
QKS	KEYSTONE	<pl>
QTE	COLOR TEMPERATURE	<color temp.>

## Parameters

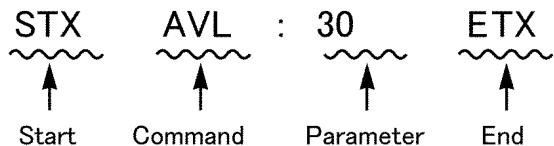
Parameter Format	Parameter Size (Byte)	Parameter Definition
<pl>	3 (provided that approves of 1 byte or 2 bytes when control)	Decimal notation without plus/minus sign (0 to 999), Decimal notation with plus/minus sign (-99 to +99) Returns 3 bytes call back from the projector. Decimal notation without plus/minus sign (000, 001, 002, ..., 999), Decimal notation with plus/minus sign (-99, -98, ..., -01, +00, +01, ..., +99)
<off_on>	1	0=OFF, 1=ON
<input signal>	3	VID=VIDEO, SVD=S-VIDEO, RG1=RGB1, RG2=RGB2 NWP = NETWORK (PT-LB20NTU/E/EA only)
<installation>	1	0=FRONT/DESK, 1=REAR/DESK, 2=FRONT/CEILING, 3=REAR/CEILING
<language>	3	ENG=English, DEU=German, FRA=French, ESP=Spanish, ITA=Italian, JPN=Japanese, CHI=Chinese, KOR=Korean, RUS=Russian, POR=Portuguese, SVE=Swedish, NOR=Norwegian, DAN=Danish, POL=Polish, CES=Czech, MAG=Hungarian, THA=Thai
<power condition>	3	000=Power OFF, 001=Power ON
<acctch>	4	Decimal notation without plus/minus sign: 0000 hour to 9999 hours
<lamp power>	1	0=LOW, 1=HIGH
<color temp.>	1	0=LOW, 1=STD, 2=HIGH

\* If an incorrect command is sent from the PC, the "ER401" command will be sent from the projector to the PC.

### [Example]

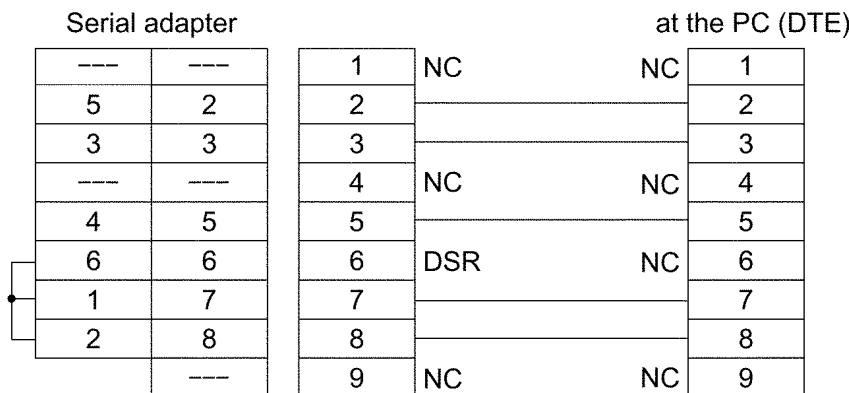
When controls the audio volume to +30 by a PC

(Sends commands as the following:)



- When a command which does not require parameters is sent, the colon (:) is not required.

## 6.6. Communication Cable Specifications



## 6.7. Signal Selector Connecting Cable Specifications

When connecting to a signal selector (ex. TW-SWS62J), use a cable with specifications below.

Connecting method: Connects a video signal cable from the signal selector to "VIDEO IN", and an RGB signal cable to "RGB1 IN".

At the signal selector D-sub 9p (male)		At the serial adapter (DCE) D-sub 9p (male)		Serial adapter	
Signal Name	Pin No.	Pin No.	Signal Name	Pin No. (cable side)	Pin No. (projector side)
NC	1	1	NC	---	---
RD Receive data	2	2	SD Transmit data	2	5
SD Transmit data	3	3	RD Receive data	3	3
NC	4	4	NC	---	---
GND Ground	5	5	GND Ground	5	4
NC	6	6	DSR	6	6
RS Transmit request	7	7	CS Transmit permission	7	1
CS Transmit permission	8	8	RS Transmit request	8	2
NC	9	9	NC	---	

**Note:**

Set VP control terminal switch of the signal selector to VP TYPE "B".

## 7 Disassembly Instructions

### Warning:

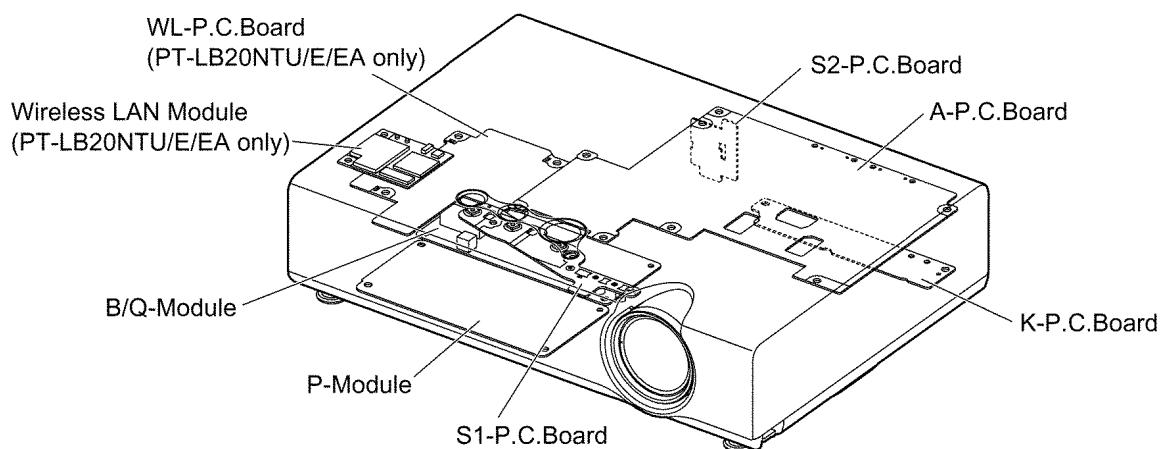
- Be sure to unplug the power cord from the power outlet before disassembling this projector.

### Caution:

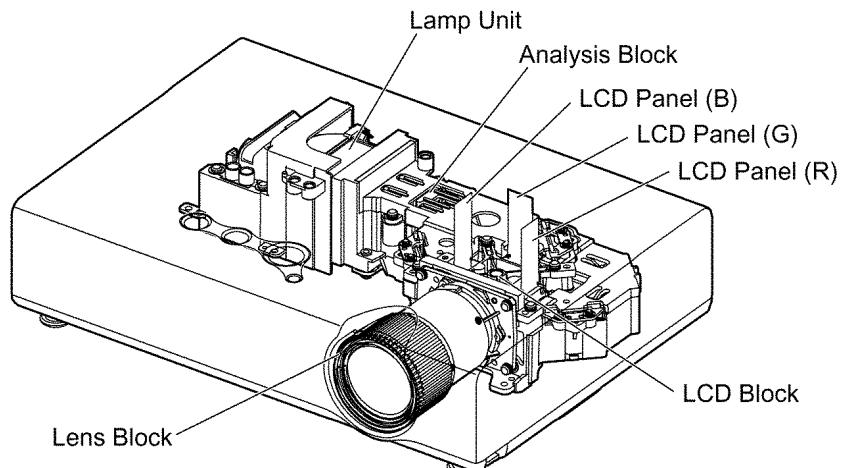
- While turning over a printed circuit board, be sure to put a insulating material under it to prevent a short circuit.
- Printed circuit boards and wires must not be pulled forcibly, but be handled carefully.
- Connectors also must be handled carefully.
- After repairing this projector, be sure to put back the wires and connectors to the original condition.

### 7.1. Printed Circuit Board and Main Parts Location

#### Electrical Parts

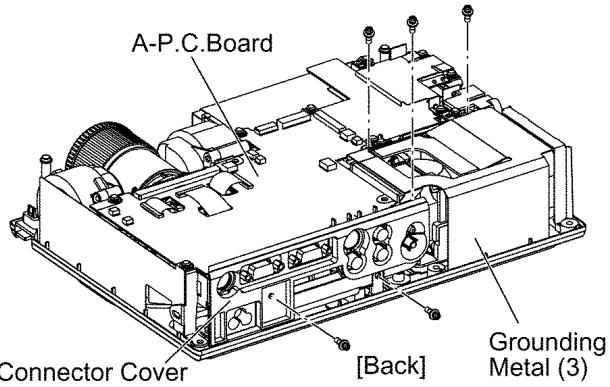
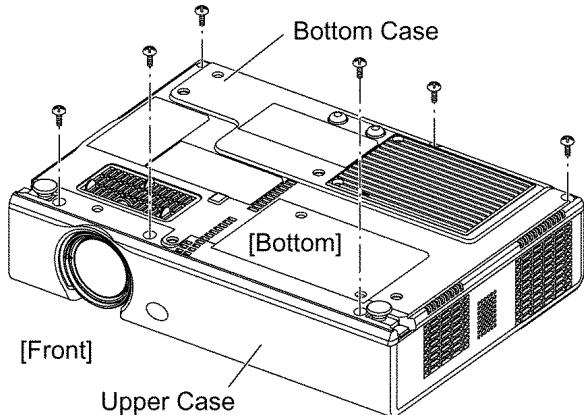


#### Optical Parts



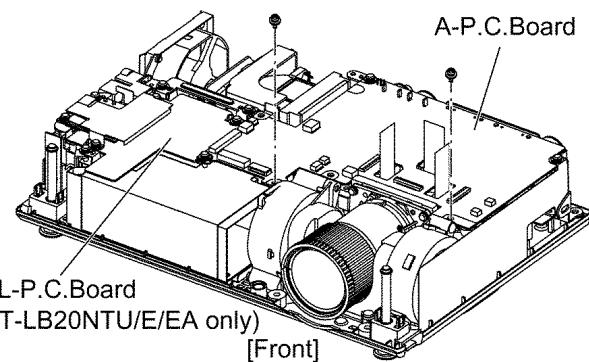
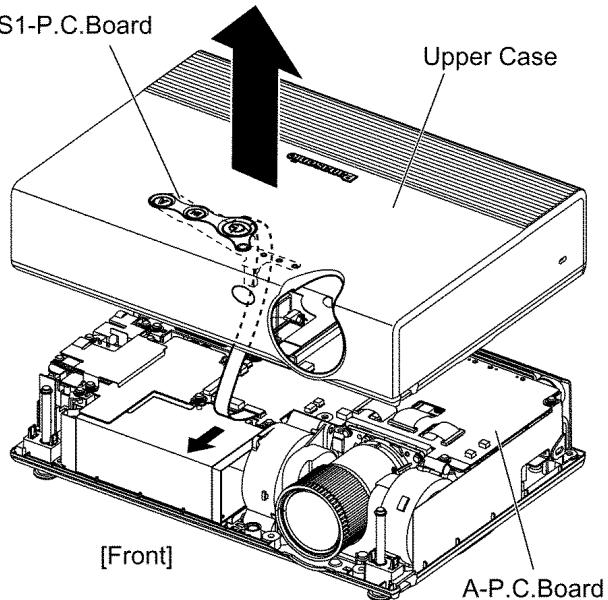
## 7.2. Removal of Upper Case

1. Turn the projector upside down.
2. Unscrew the 6 screws.



5. Disconnect the connectors from/to the A-P.C.Board.
6. Unscrew the 2 screws and remove the A-P.C.Board block with the S2-P.C.Board.

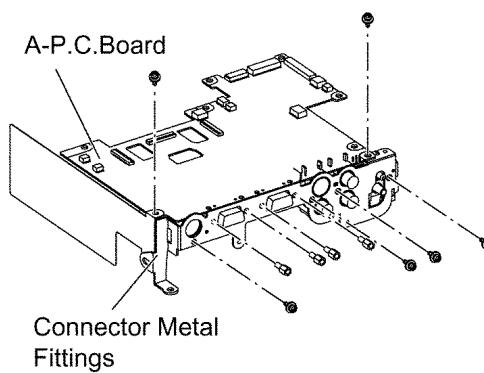
3. Return the projector to the normal position.
4. Lift the upper case upward (approx. 10 cm).
5. Disconnect the cable from S1-P.C.Board (connector A8 on A-P.C.Board) and remove the upper case.



7. Unscrew the 10 screws and remove the connector metal fittings.

**Note:**

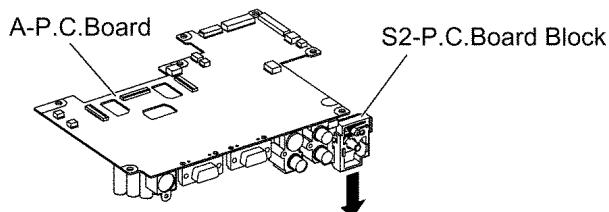
- Because the S2-P.C.Board block is attached, work carefully when removing the connector metal fittings.



## 7.3. Removal of A-P.C.Board

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Unscrew the 1 screw on the backside and remove the connector cover.
3. Unscrew the 1 screw fixing the connector metal fittings on the backside.
4. Unscrew the 3 screws and remove the grounding metal (3).

8. While disconnecting the connector between A- and S2-P.C. Boards, remove the S2-P.C. Board block.



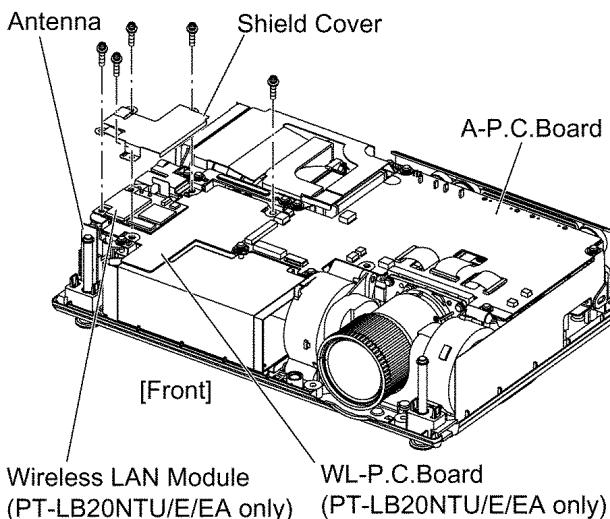
## 7.4. Removal of WL-P.C.Board (PT-LB20NTU/E/EA only)

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Unscrew the 4 screws and remove the shield cover and wireless LAN module.

**Notes:**

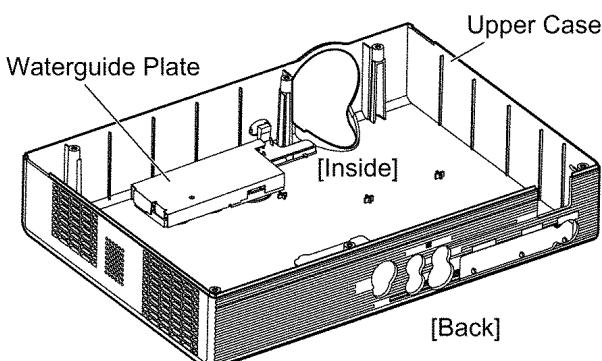
- Because the wireless LAN module is connected with the WL-P.C.Board, work carefully when removing it.
- When installing/detaching the antenna connector, insert or pull out it straight along the center of the connector pin. It causes damage and/or poor contacting of the connector when forcibly installing/detaching it.
- Connect the connector from the antenna with the original position (connector on the wireless LAN module) after reassembling.

3. Unscrew the 1 screw and remove the WL-P.C.Board.

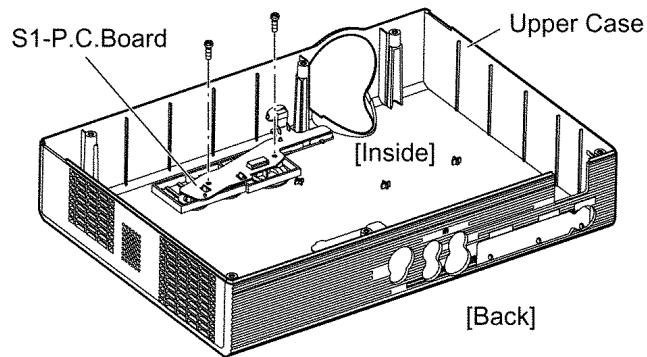


## 7.5. Removal of S1-P.C.Board

1. Remove the upper case according to the section 7.2. "Removal of Upper Case".
2. Remove the water-guide plate.



3. Unscrew the 2 screws and remove the S1-P.C.Board.

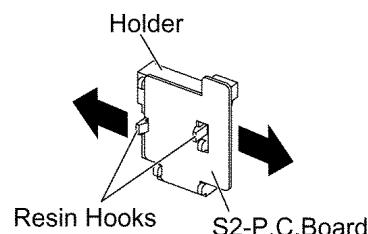


## 7.6. Removal of S2-P.C.Board

1. Remove the S2-P.C.Board block according to the section 7.3. "Removal of A-P.C.Board".
2. Remove the holder while expanding the resin hooks outside.

**Note:**

- Work carefully not to damage the resin hook.



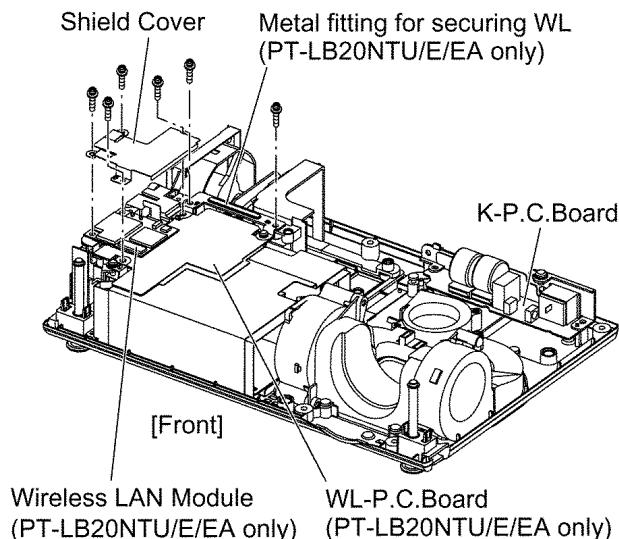
## 7.7. Removal of K-P.C.Board

1. Remove the analysis block, LCD block and lens according to the steps 1 through 3 in the section 7.11. "Removal of Analysis Block and Lens".
2. For PT-LB20NTU/E/EA, unscrew the 4 screws and remove the shield cover and wireless LAN module.

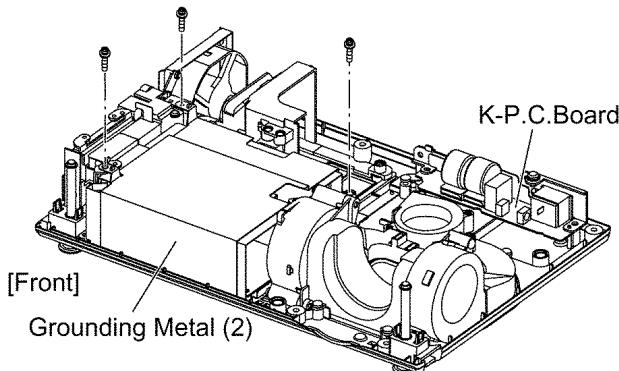
**Notes:**

- Because the wireless LAN module is connected with the WL-P.C.Board, work carefully when removing it.
- When installing/detaching the antenna connector, insert or pull out it straight along the center of the connector pin. It causes damage and/or poor contacting of the connector when forcibly installing/detaching it.
- Connect the connector from the antenna with the original position (connector on the wireless LAN module) after reassembling.

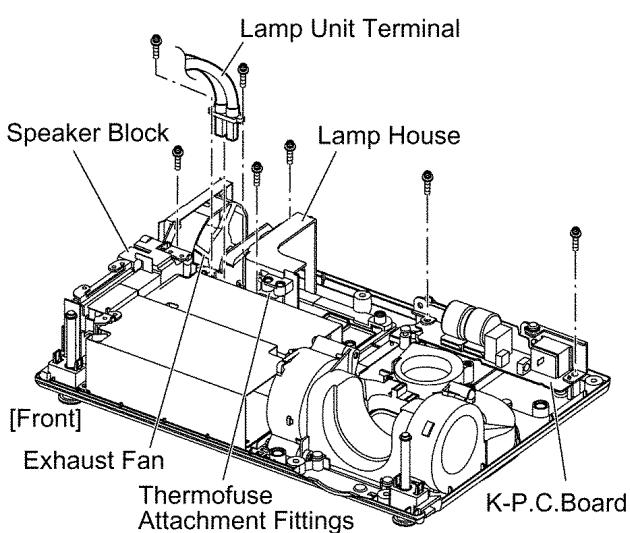
3. For PT-LB20NTU/E/EA, unscrew the 2 screws and remove the WL-P.C.Board (with metal fittings for securing WL).



4. Unscrew the screws (PT-LB20NTU/E/EA: 2, Others: 3) and remove the grounding metal (2).



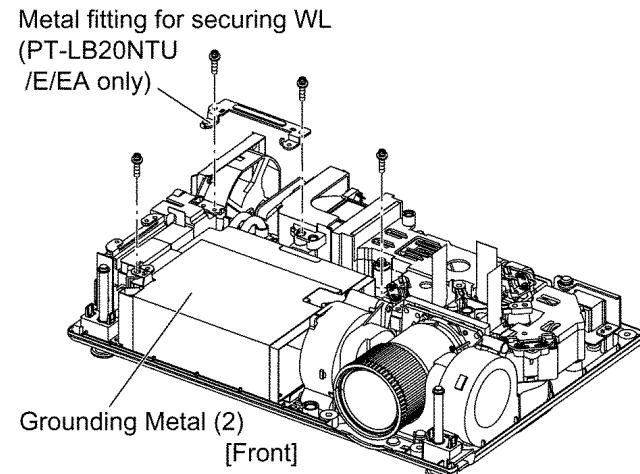
5. Unscrew the 2 screws and remove the lamp unit terminal.  
 6. Unscrew the 3 screws and remove the lamp house and thermofuse attachment fittings.  
 7. Unscrew the 2 screws and remove the K-P.C.Board.



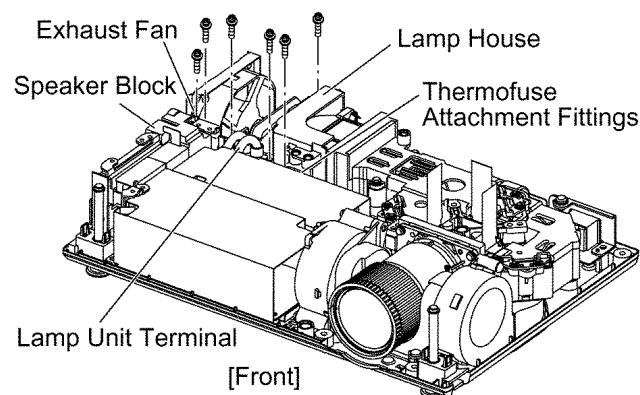
## 7.8. Removal of B/Q-Module

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".  
 2. For PT-LB20NTU/E/EA, remove the WL-P.C.Board

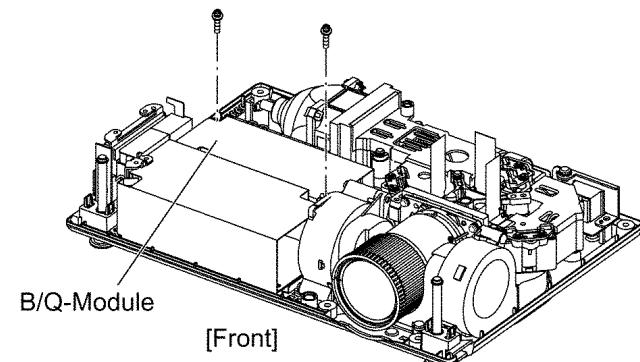
according to the section 7.4. "Removal of WL-P.C.Board".  
 3. For PT-LB20NTU/E/EA, unscrew the 2 screws and remove the metal fittings for securing WL.  
 4. Unscrew the screws (PT-LB20NTU/E/EA: 2, Others: 3) and remove the grounding metal (2).



5. Unscrew the 2 screws and remove the lamp unit terminal.  
 6. Unscrew the 3 screws and remove the lamp house and thermofuse attachment fittings.  
 7. Unscrew the 1 screw and remove the exhaust fan and speaker block.



8. Unscrew the 2 screws and remove the B/Q-Module.

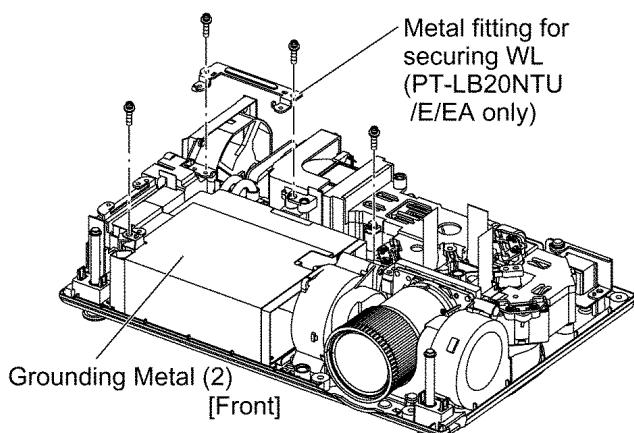


## 7.9. Removal of P-Module

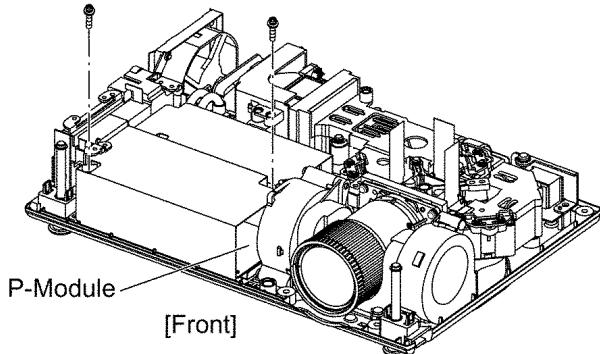
1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".  
 2. For PT-LB20NTU/E/EA, remove the WL-P.C.Board

according to the section 7.4. "Removal of WL-P.C.Board".

3. For PT-LB20NTU/E/EA, unscrew the 2 screws and remove the metal fittings for securing WL.
4. Unscrew the screws (PT-LB20NTU/E/EA: 2, Others: 3) and remove the grounding metal (2).

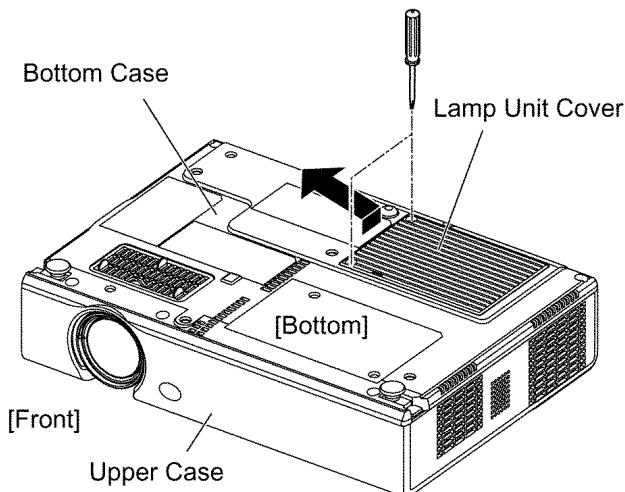


5. Unscrew the 2 screws and remove the P-Module.

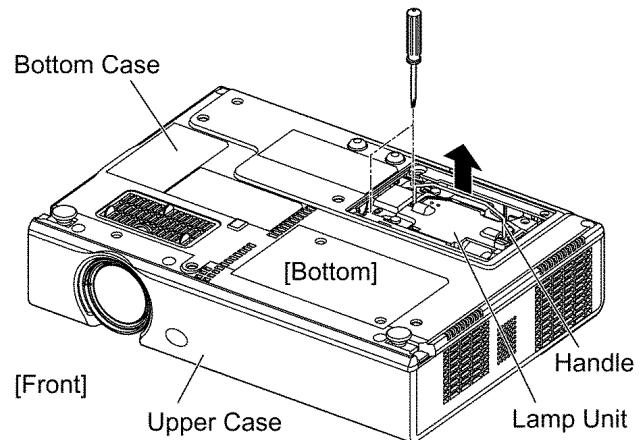


## 7.10. Removal of Lamp Unit

1. Turn the projector upside down.
2. Loosen the 2 screws until they idle, remove the lamp unit cover.



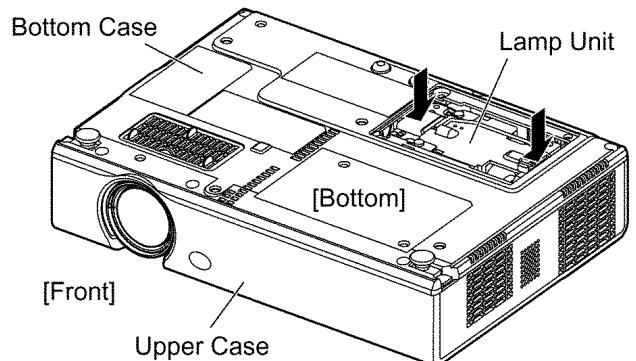
3. Loosen the 2 screws until they idle, remove the lamp unit with the handle.



### Note:

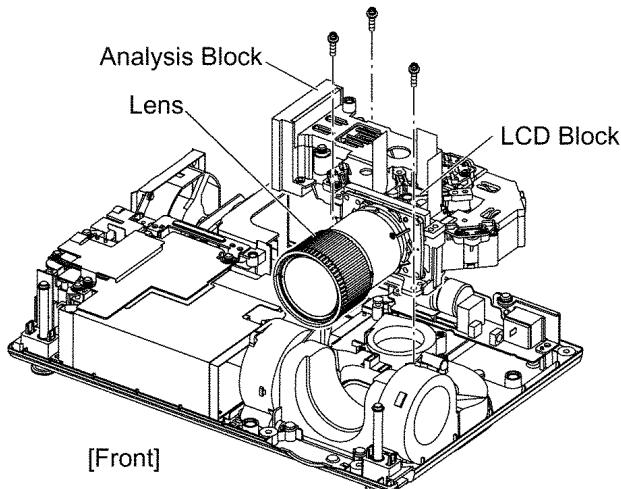
- When installing the lamp unit (or a new one) in the main unit, place it in a specified position and press the connector side and the opposite side of the lamp unit (arrow positions shown in the figure below), and confirm the lamp unit is inserted securely.

Then, tighten the 2 screws fixing the lamp unit, and attach the lamp unit cover.

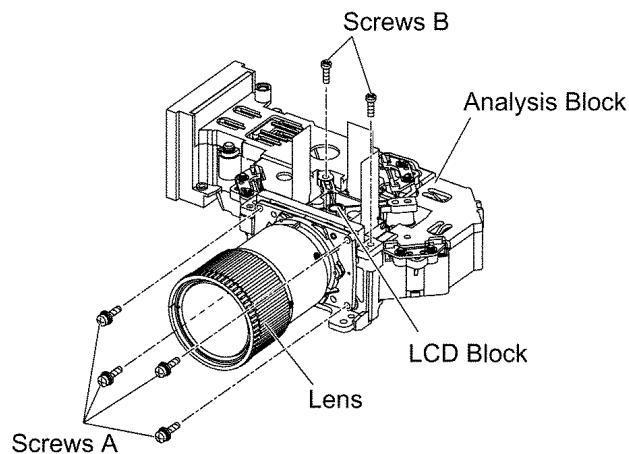


## 7.11. Removal of Analysis Block and Lens

1. Remove the lamp unit according to the section 7.10. "Removal of Lamp Unit".
2. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
3. Unscrew the 3 screws and remove the analysis block, LCD block and lens.



4. Unscrew the 4 screws A and remove the lens.
5. Unscrew the 2 screws B and remove the LCD block (the analysis block remains).

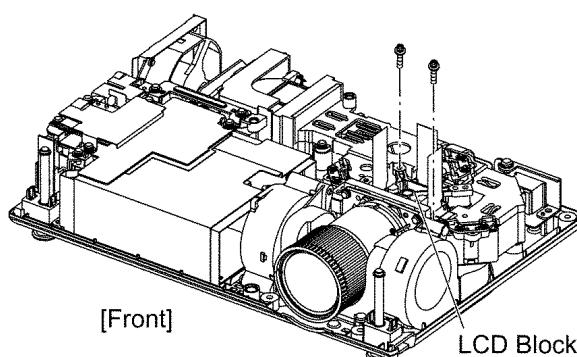


## 7.12. Removal of LCD Block

1. Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the 2 screws and remove the LCD block.

**Note:**

- Be careful not to touch the surface of prism and LCD panel.



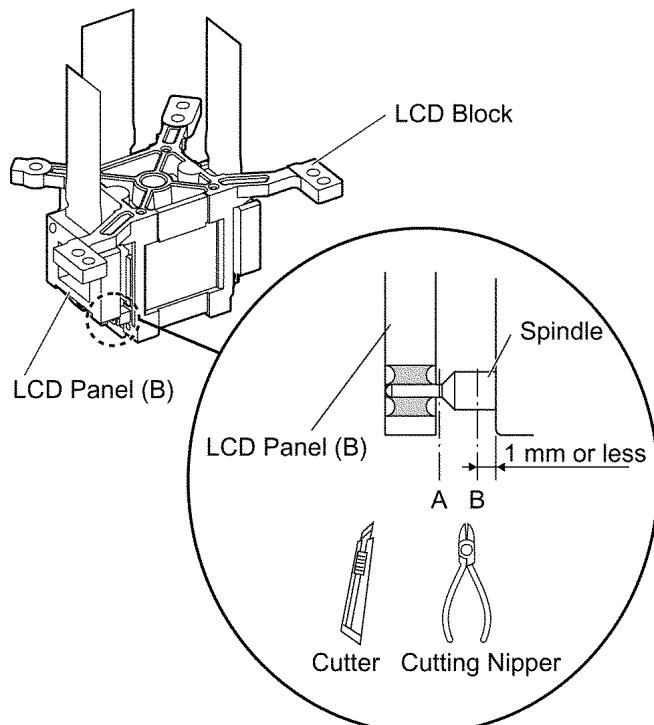
## 7.13. Replacement of LCD Panel

- The procedure is described as an example of LCD panel (B).

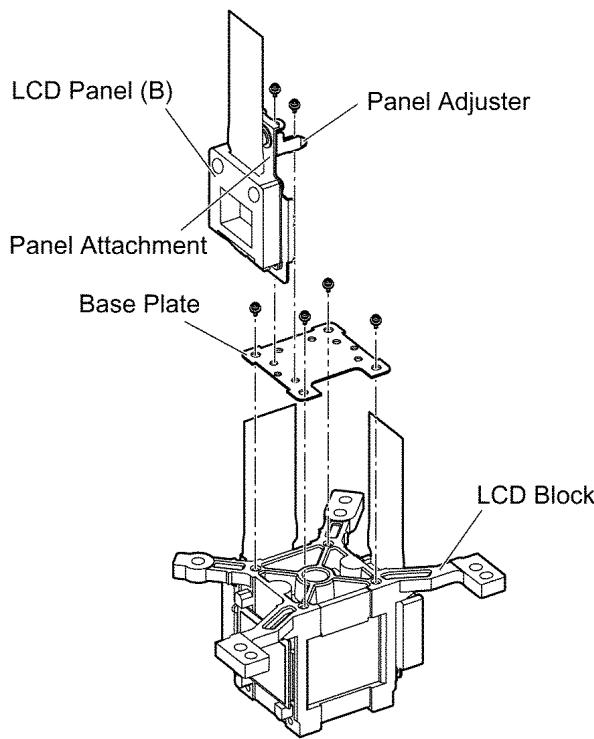
1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Cut the 4 LCD panel installation spindles at the position A and remove the LCD panel.
3. Cut the 4 LCD panel installation spindles at the position B and remove them.

**Notes:**

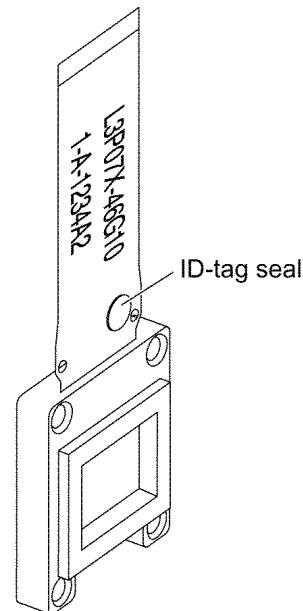
- Work carefully not to apply external force around the spindle part by using a cutter, cutting nipper or the like for cutting the spindle.
- Adjust the height after the spindle is cut to 1 mm or less.



4. Attach the base plate with 4 screws.
5. Tighten the 2 screws temporarily just until new LCD panel (with the panel attachment and panel adjuster) can be shifted by your fingers.



- Since the ID-tag seal is pasted to the FPC of LCD Panel, (R), (G) or (B) can be easily identified by the color of the seal.
- Finally, identify the panel color by the part number printed on the FPC.



6. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.

7. Adjust the convergence according to the section 8.4. "Convergence Adjustment".

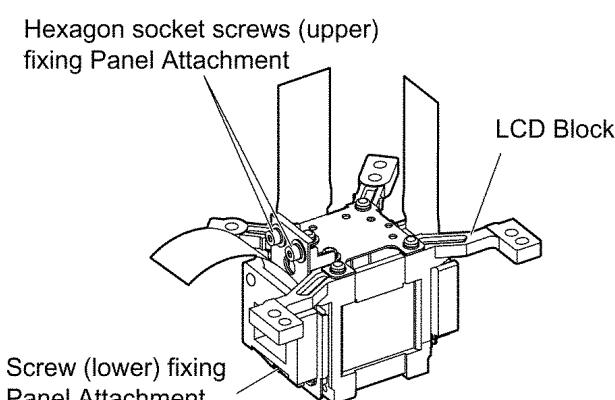
8. After the adjustment, while paying attention not to vary the adjusting result, tighten the 2 screws (upper) fixing the panel attachment temporarily with a hexagon head wrench.

#### Notes:

- Prepare a hexagon head wrench processed short.
- Service tool (Part No. TZSH07010), hexagon head wrench processed short, is available.

9. Remove the LCD block again.

10. Tighten the 3 screws fixing the panel attachment.



11. Reassemble the projector as it was.

## 7.14. LCD Panel Discrimination

ID-tag seal color	LCD panel
Red	LCD panel (R)
Blue	LCD panel (B)
(No seal)	LCD panel (G)

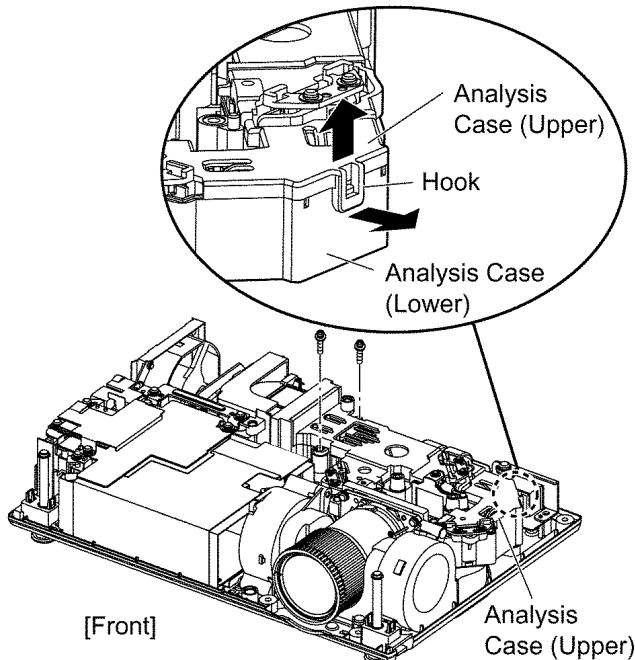
## 7.15. LCD Panel Combination

- Part number is printed on the FPC of LCD Panel.
- When replacing LCD Panel, use a component which has the same part number as the original.

Model number	LCD panel	Part No.
PT-LB20NTU/E/EA PT-LB20U/E/EA	R	L5BDAXQ00221 (L3P07X-46G10)
	G	L5BDAXQ00222 (L3P07X-46G10)
	B	L5BDAXQ00223 (L3P07X-46G10)
PT-LB20SU/E/EA	R	L5BDAXN00073 (L3P07S-46G00)
	G	L5BDAXN00074 (L3P07S-46G00)
	B	L5BDAXN00075 (L3P07S-46G00)
PT-LB20VU/E/EA	R	L5BDAXQ00248 (L3P06X-55G10)
	G	L5BDAXQ00249 (L3P06X-55G10)
	B	L5BDAXQ00250 (L3P06X-55G10)

## 7.16. Replacement of Incidence Polarizer (R and B)

1. Remove the LCD block according to the section 7.12. "Removal of LCD Block".
2. Unscrew the 2 screws.
3. Remove the analysis case (upper) while expanding the hook of it outside.

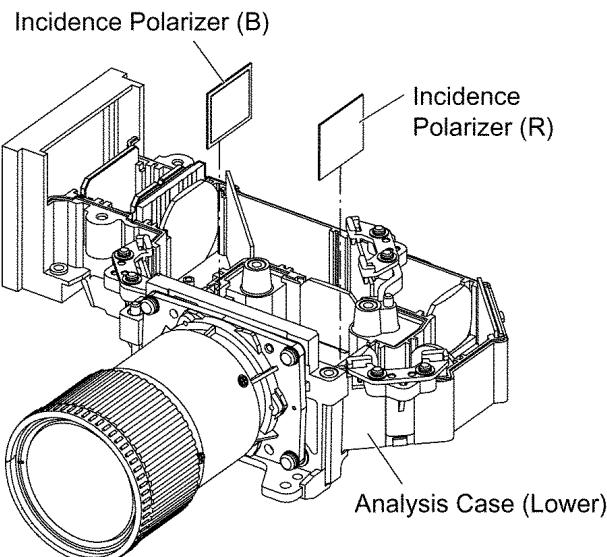
**Note:**

- Because the hook is damaged easily, be careful not to expand it excessively.
- The incidence polarizer (G) is installed in the analysis case (upper). Handle with care not to apply external force to the incidence polarizer (G).

## 4. Replace the incidence polarizer.

**Note:**

- Be careful not to touch the surface of incidence polarizer.



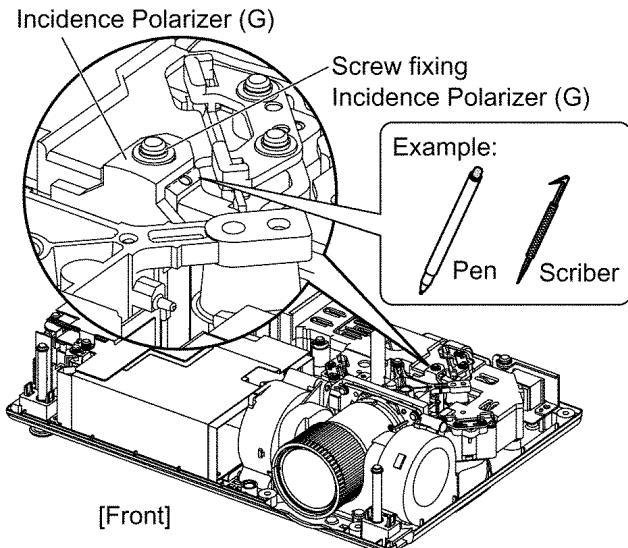
## 7.17. Replacement of Incidence Polarizer (G)

- Remove the A-P.C.Board block according to the steps 1 through 6 in the section 7.3. "Removal of A-P.C.Board".
- Mark positions of the incidence polarizer (G).

**Note:**

- Mark accurately as possible because the marks will

be used for resetting the incidence polarizer position.



- Unscrew the 1 screw and remove the incidence polarizer (G).
- Attach a new incidence polarizer (G) and align it with the mark.
- Tighten the 1 screw with care not to move the incidence polarizer position.

## 7.18. Replacement of Projection Polarizer

The procedure is described as an example of projection polarizer (B).

- Remove the LCD block according to the section 7.12. "Removal of LCD Block".
- Remove the projection polarizer which requires replacing. (The projection polarizer is secured with adhesive tape.)

**Notes:**

- Be careful not to damage peripheral components (prism, LCD panel, etc.).
- Use tweezers.

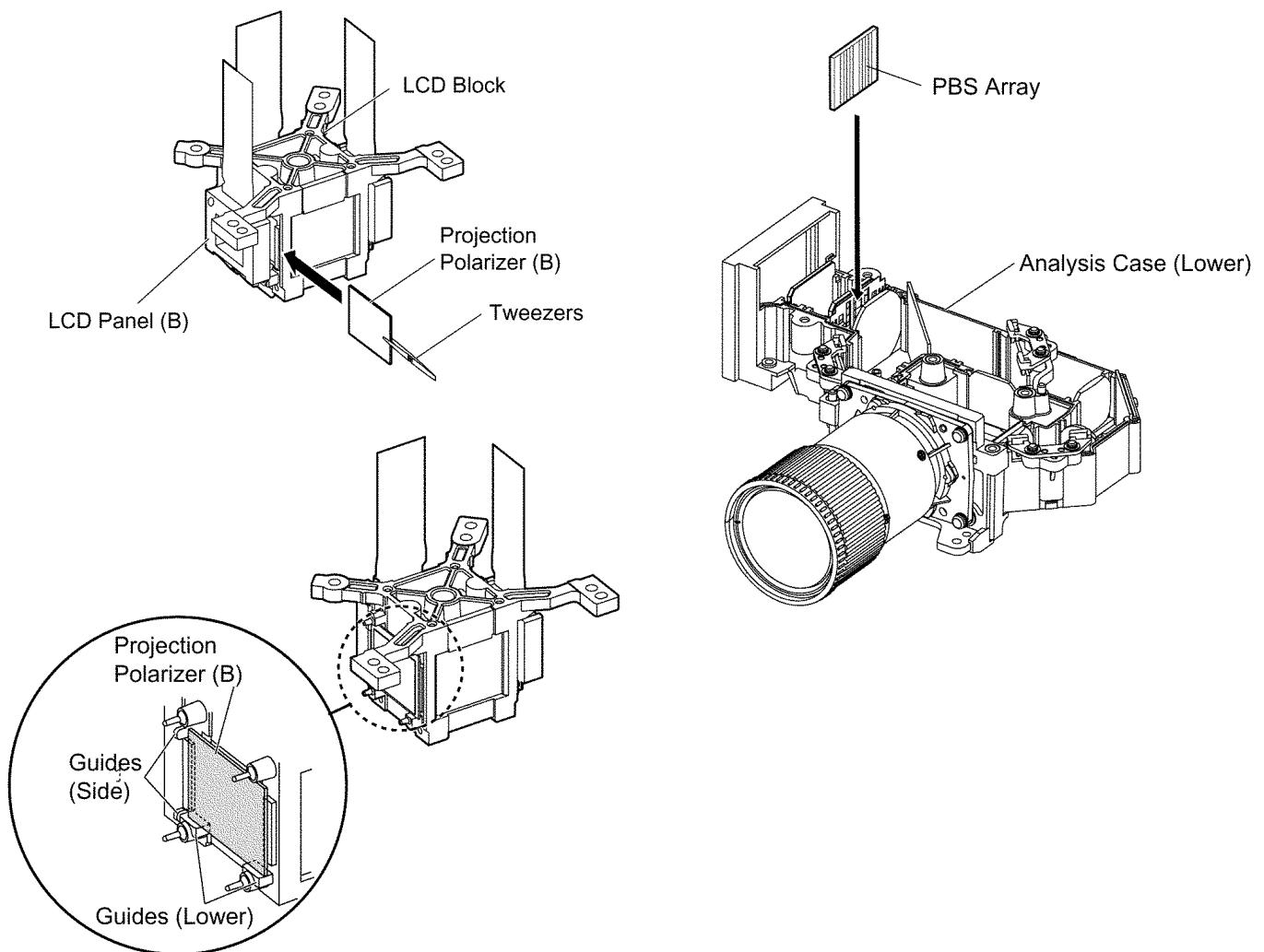
## 3. Install new projection polarizer.

- Put adhesive tape on the projection polarizer.
- Stick the projection polarizer on the specified position.

**Notes:**

- Align the projection polarizer with the guides (lower, side) of LCD block.
- Be careful not to touch the surface of projection polarizer.
- Use tweezers.

- Press the adhesive part and secure the projection polarizer.



## 7.19. Replacement of PBS Array (Analysis Block)

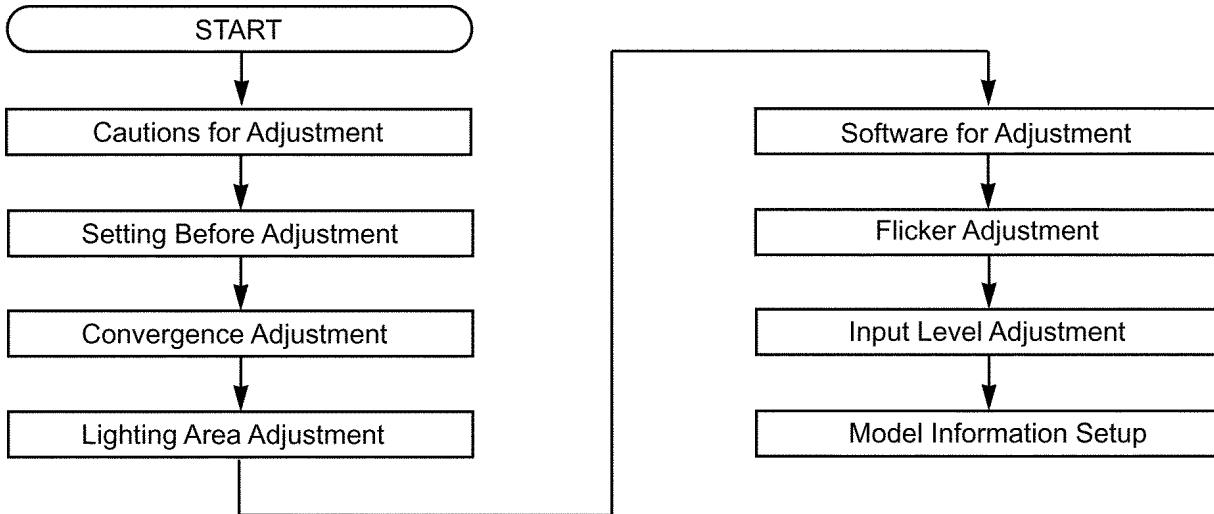
1. Remove the analysis case (upper) according to the steps 1 through 3 in the section 7.16. "Replacement of Incidence Polarizer (R and B)".
2. Remove the PBS array.
3. Install new PBS array.

**Note:**

- Be careful not to mistake the direction (inside and outside, upper and lower).
- Be careful not to touch the surface of PBS array.

## 8 Measurement and Adjustments

### **8.1. Adjustment Procedure Flowchart**



## **8.2. Cautions for Adjustment**

- Never unplug the power cord until the power indicator on the projector illuminates red.
- To maintain and ensure safety, always use the designated components for replacement parts.
- If removing any clamps, lead wires or connectors, always place them back in their proper locations.
- Be careful not to damage the lead wires or components when using a soldering iron or similar tool.

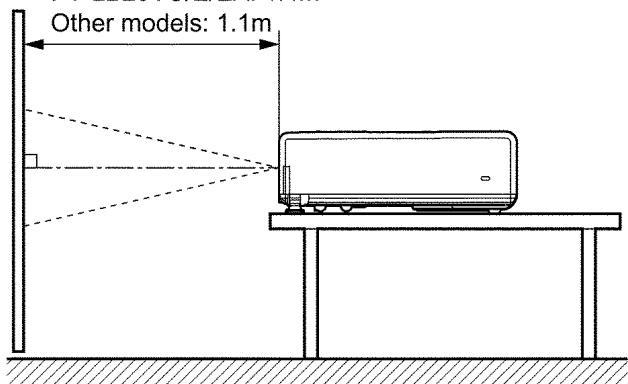
### 8.3. Setting Before Adjustment

- Set up the projector to obtain the projection distance below.
- Turn the zoom ring of the projector to obtain the largest size of the picture.

### Projection Distance

PT-LB20VU/E/EA; 1.4m

Other models: 1.1m



#### 8.4. Convergence Adjustment

Execute this adjustment when replacing the LCD panel .

#### **8.4.1. Tools to be used**

Service Kit (Part No. TZSH07015): This kit is composed of 3

extension flexible cables and 3 connector extension cables.

**Note:**

- Consult your dealer or Authorized Service Center for the service kit.

#### **8.4.2. Preparation**

1. Loosen 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment, then tighten the 5 screws temporarily just until the LCD panel can be shifted by your fingers.

**Note:**

- See figures in the section 7.13. "Replacement of LCD Panel" for 2 screws fixing the panel adjuster and 3 screws fixing the panel attachment.

2. Reassemble the projector in the reverse order of disassembling, but leave the upper case and the screws fixing the A-P.C.Board block as they are removed.

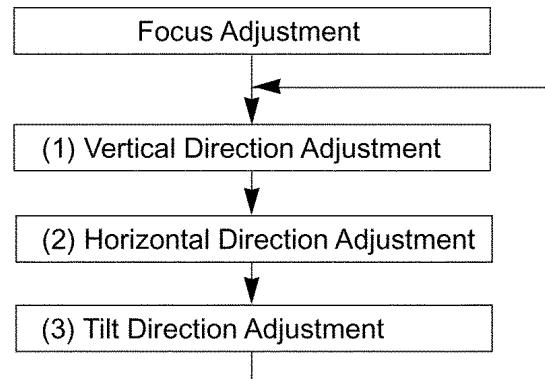
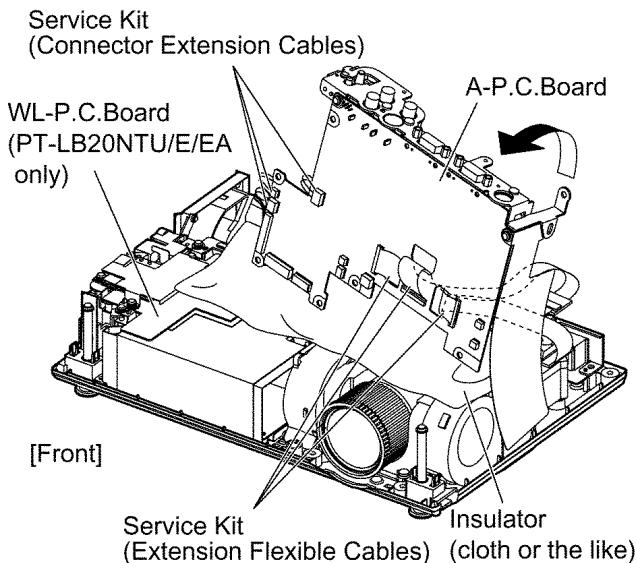
### 3. Connect the service kit (extension cables).

- Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2/A3) on A-P.C.Board
- Power fan connector - Connector (A16) on A-P.C.Board
- Exhaust fan connector - Connector (A17) on A-P.C.Board
- PBS fan connector - Connector (A19) on A-P.C.Board

4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

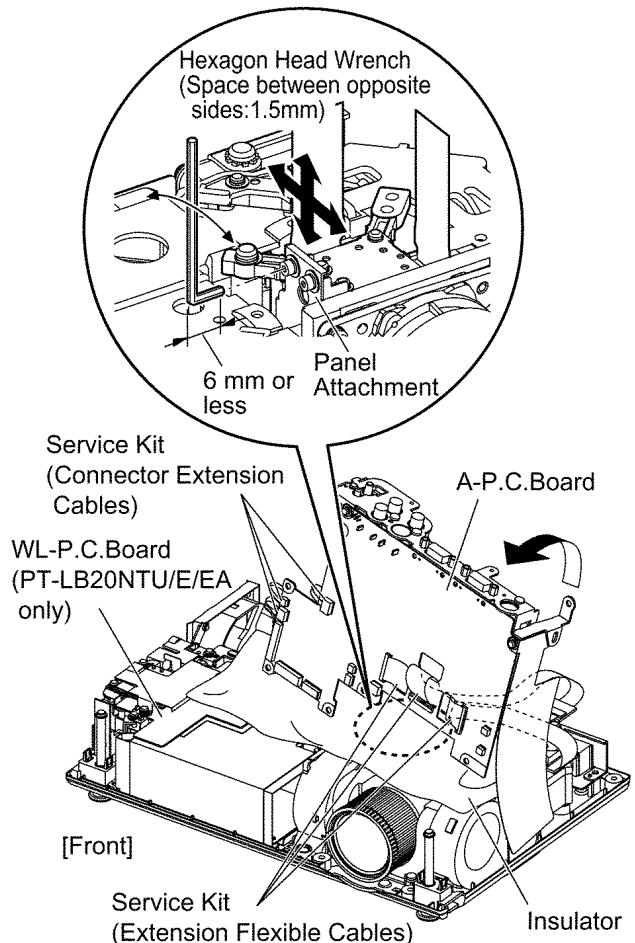
**Note:**

- Handle with care not to apply external force to connecting parts which connect the main unit and A.P.C.Board.



Repeat steps (1) to (3) until the green and blue crosshatch patterns merge into a cyan pattern.

8. After the adjustment, reassemble the projector according to the steps 8 through 11 in the section 7.13. "Replacement of LCD Panel".



### 8.4.3. Adjustment Procedure

#### [When replacing single LCD panel (R, G or B)]

Prepare 2 pieces of thick black paper (23 mm × 100 mm) that can be shaded.

- Cover and shade LCD panels with the paper except the panel for adjustment.

The procedure is described as an example when LCD panel (B) is replaced.

1. Display the green crosshatch pattern and adjust the lens focus.
2. Display green and blue crosshatch patterns.
3. Adjust focus by shifting the panel adjuster for LCD panel (B) back and forth, then tighten the 2 screws.
4. Adjust the LCD panel (B) position so that the vertical center of blue crosshatch pattern is overlapped with the vertical center of green crosshatch pattern.
5. Adjust the LCD panel (B) position so that the horizontal center of blue crosshatch pattern is overlapped with the horizontal center of green crosshatch pattern.
6. Correct the tilt of the blue crosshatch pattern by adjusting the LCD panel (B) position.
7. Display green, red and blue crosshatch patterns and confirm the convergence. If it is necessary, fine adjust the convergence so that the red and/or blue crosshatch pattern is overlapped with green one.

## 8.5. Lighting Area Adjustment

### 8.5.1. Tools to be used

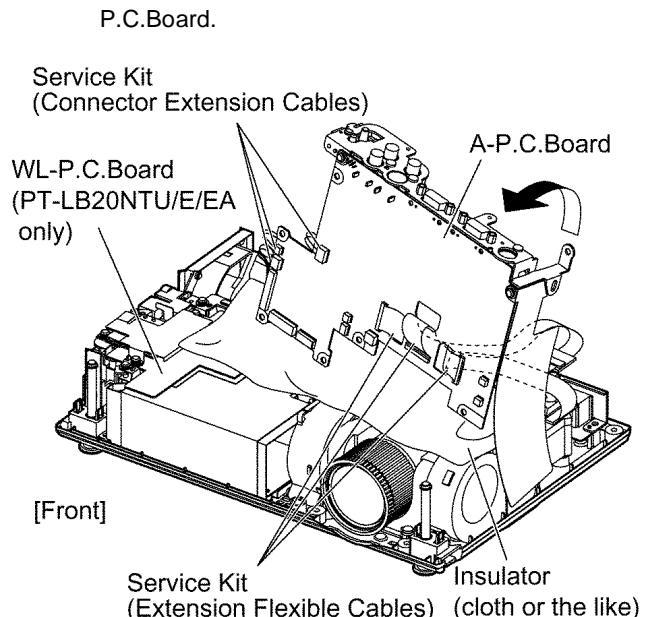
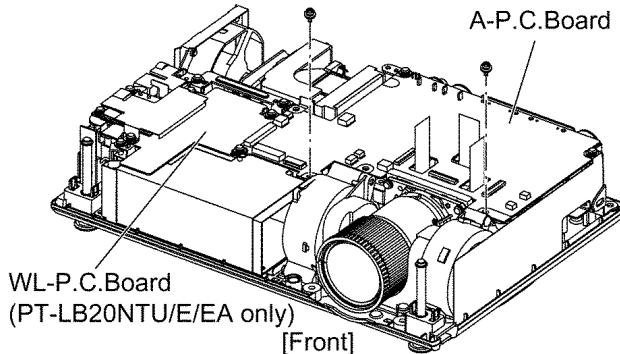
Service Kit (Part No. TZSH07015): This kit is composed of 3 extension flexible cables and 3 connector extension cables.

#### Note:

- Consult your dealer or Authorized Service Center for the service kit.

## 8.5.2. Preparation

1. Remove the connector cover and grounding metal (3) according to the steps 1 through 4 in the section 7.3. "Removal of A-P.C.Board".
2. Unscrew the 2 screws.



3. Connect the service kit (extension cables).

- Each flexible cable of LCD Panels (R/G/B) - Connectors (A1/A2/A3) on A-P.C.Board
- Power fan connector - Connector (A16) on A-P.C.Board
- Exhaust fan connector - Connector (A17) on A-P.C.Board
- PBS fan connector - Connector (A19) on A-P.C.Board

4. Covering with an insulator (cloth or the like) to prevent a short circuit, set the A-P.C.Board block on the main unit.

**Note:**

- Handle with care not to apply external force to connecting parts which connect the main unit and A-P.C.Board.

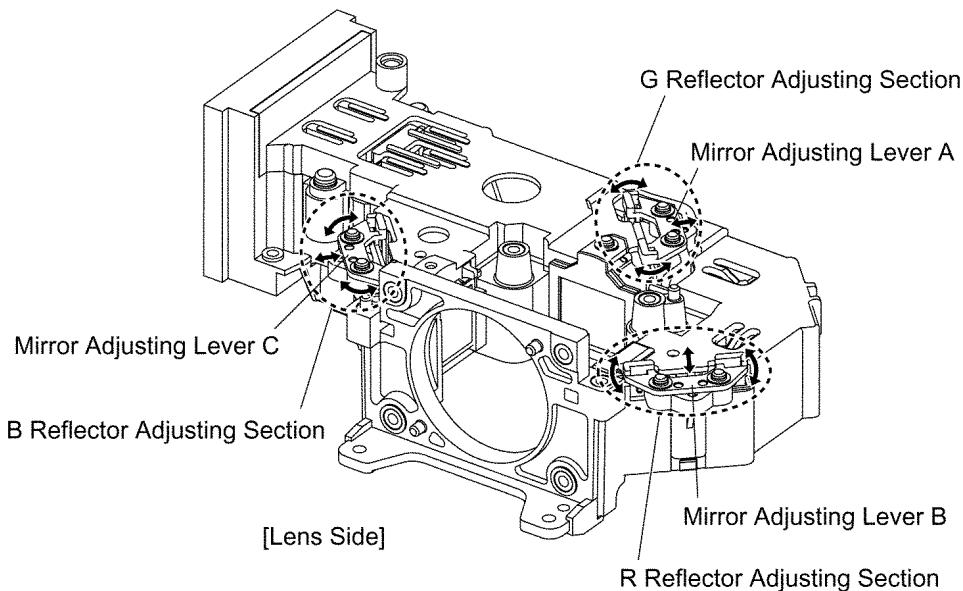
## 8.5.3. Adjustment Procedure

### 8.5.3.1. Outline

When the lighting area is off from the adjustment and color unevenness appears, adjust the lighting area into correct position.

Symptom	Measure
Magenta unevenness	G Reflector Adjustment
Cyan unevenness	R Reflector Adjustment
Yellow unevenness	B Reflector Adjustment

- Shifting the mirror adjusting lever horizontally, adjust color unevenness on the screen upper/lower sides.
- Twisting the mirror adjusting lever, adjust color unevenness on the screen right/left sides.



[Above figure is shown only the analysis block for explanation.]

### 8.5.3.2. G Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.

2. Loosen the 2 screws fixing the mirror adjusting lever A just until the lever can be shifted.
3. Adjust the mirror adjusting lever A position to minimize color unevenness on the screen by shifting the lever in arrow

directions.

4. Tighten the 2 screws.

### 8.5.3.3. R Reflector Adjustment

1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever B just until the lever can be shifted.
3. Adjust the mirror adjusting lever B position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

### 8.5.3.4. B Reflector Adjustment

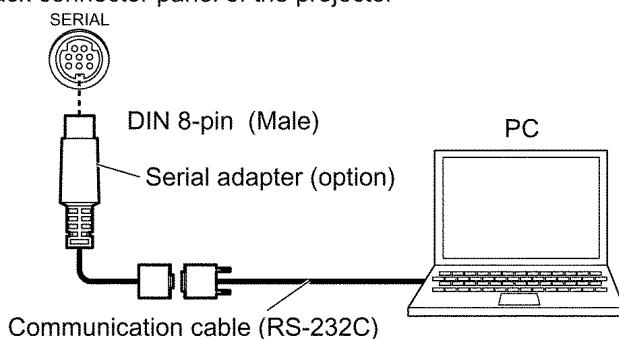
1. Turn on the power and display 100 % white pattern on the screen.
2. Loosen the 2 screws fixing the mirror adjusting lever C just until the lever can be shifted.
3. Adjust the mirror adjusting lever C position to minimize color unevenness on the screen by shifting the lever in arrow directions.
4. Tighten the 2 screws.

## 8.6. Software for Adjustment

### 8.6.1. Outline

- This projector needs computer-aided adjustments.
- After the software adjustments, this projector must be turned off and on again to memorize the settings.
- Connect the cable between the projector and a PC as shown below.
- Updating the software will change the version number.

Back connector panel of the projector



### 8.6.2. Operating Procedure

1. Run software program by the keyboard entry.

**Note:**

- Use the software program as below.

Adjustment Tool [LB20/LB30]

2. The first menu is Port and Model selection menu.
3. Adjust the projector by selecting the necessary item from the menu in each stage.

### 8.6.3. Port and Model Selection Menu



Select the applying item with the list box and click "Data" or "Adjustment".

#### 8.6.3.1. Explanation of Buttons

**Port:**

Port name of PC which connects with the projector

**Model:**

Pixels (XGA/S-VGA) of LCD panels of the model involved

**Data:**

Displays the data transmission/reception menu.

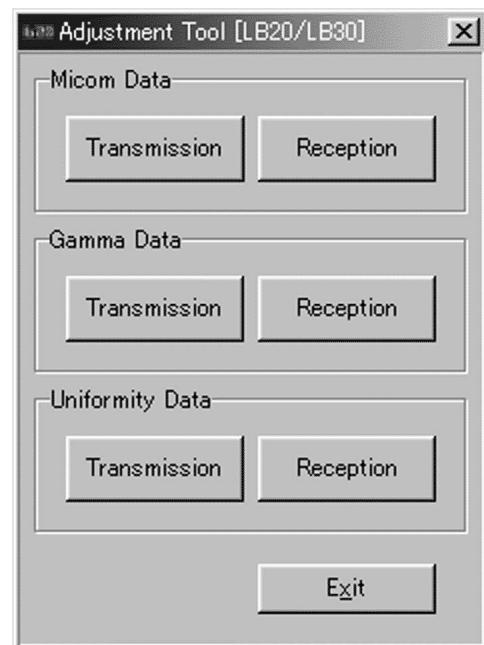
**Adjustment:**

Displays the adjustment menu.

**Exit:**

Exits this application.

### 8.6.4. Data Transmission/Reception Menu



#### 8.6.4.1. Explanation of Buttons

**Micom Data Transmission:**

Reads the microcomputer data from the file and transmits it to the projector.

**Micom Data Reception:**

Receives the microcomputer data from the projector and writes it in the file.

**Gamma Data Transmission:**

Reads the gamma data from the file and transmits it to the

projector.

#### **Gamma Data Reception:**

Receives the gamma data from the projector and writes it in the file.

#### **Uniformity Data Transmission:**

Reads the color unevenness correction data from the file and transmits it to the projector.

#### **Uniformity Data Reception:**

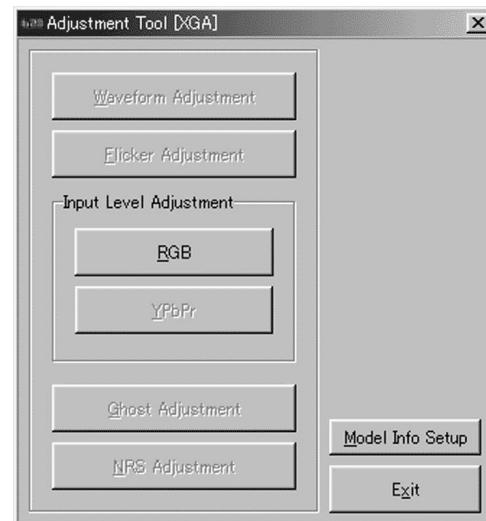
Receives the color unevenness correction data from the projector and writes it in the file.

#### **Exit:**

Exits this application.

### **8.6.4.2. Receiving and transmitting of the data**

Click a target button and specify a file name.



### **8.6.5.1. Explanation of Buttons**

#### **Input Level Adjustment RGB:**

Displays the RGB input level adjustment menu.

#### **Model Info Setup**

Displays the model information setup menu.

#### **Exit:**

Exits this application.

## **8.7. Flicker Adjustment**

According to the procedure of chapter 5 "Flicker Adjustment Mode", minimize the flicker.

## **8.8. Input Level Adjustment**

### **8.8.1. Adjustment Menu**



### **8.8.2. Explanation of Buttons**

#### **OK:**

Executes automatic sub contrast and sub brightness adjustments, then closes this dialog.

#### **Cancel:**

Cancels this menu.

### **8.8.3. Equipment to be used**

PC, RGB Signal Generator, Software for Adjustment

### **8.8.4. Adjustment Procedure**

width = 2 : 1

Black background (screen height) : White window  
height = 3 : 1

- PT-LB20NTU/E/EA, LB20U/E/EA, LB20VU/E/EA must use the window pattern of XGA (1 024 × 768).
- PT-LB20SU/E/EA must use the window pattern of SVGA (800 × 600).

3. Click the OK button.

1. Display the input level adjustment [RGB] menu.

2. Input a window pattern signal to RGB IN connector.

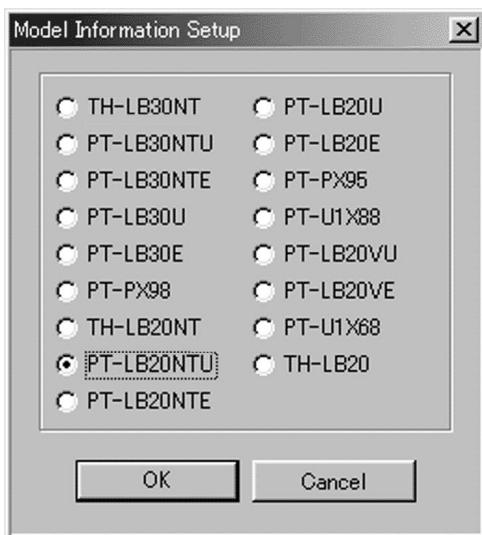
#### **Note:**

- Use approx. 15 % window pattern as follows.

Black background (screen width) : White window

## 8.9. Model Information Setup

### 8.9.1. Adjustment Menu



### 8.9.2. Explanation of Buttons

#### Radio buttons:

Selects the corresponding model name.

#### OK:

Executes model information setup, then closes this dialog.

#### Cancel:

Cancels this menu.

### 8.9.3. Equipment to be used

PC, Software for Adjustment

### 8.9.4. Setup Procedure

Set the projector into standby mode (Power indicator on the projector control panel illuminated red), and execute the following procedure.

1. Display the model information setup menu.
2. Select the corresponding model name.
3. Click the OK button.

## 9 Troubleshooting

The letters in the left of the inspection items indicate the P.C. Boards or Modules related to their respective descriptions.

Note: [A]

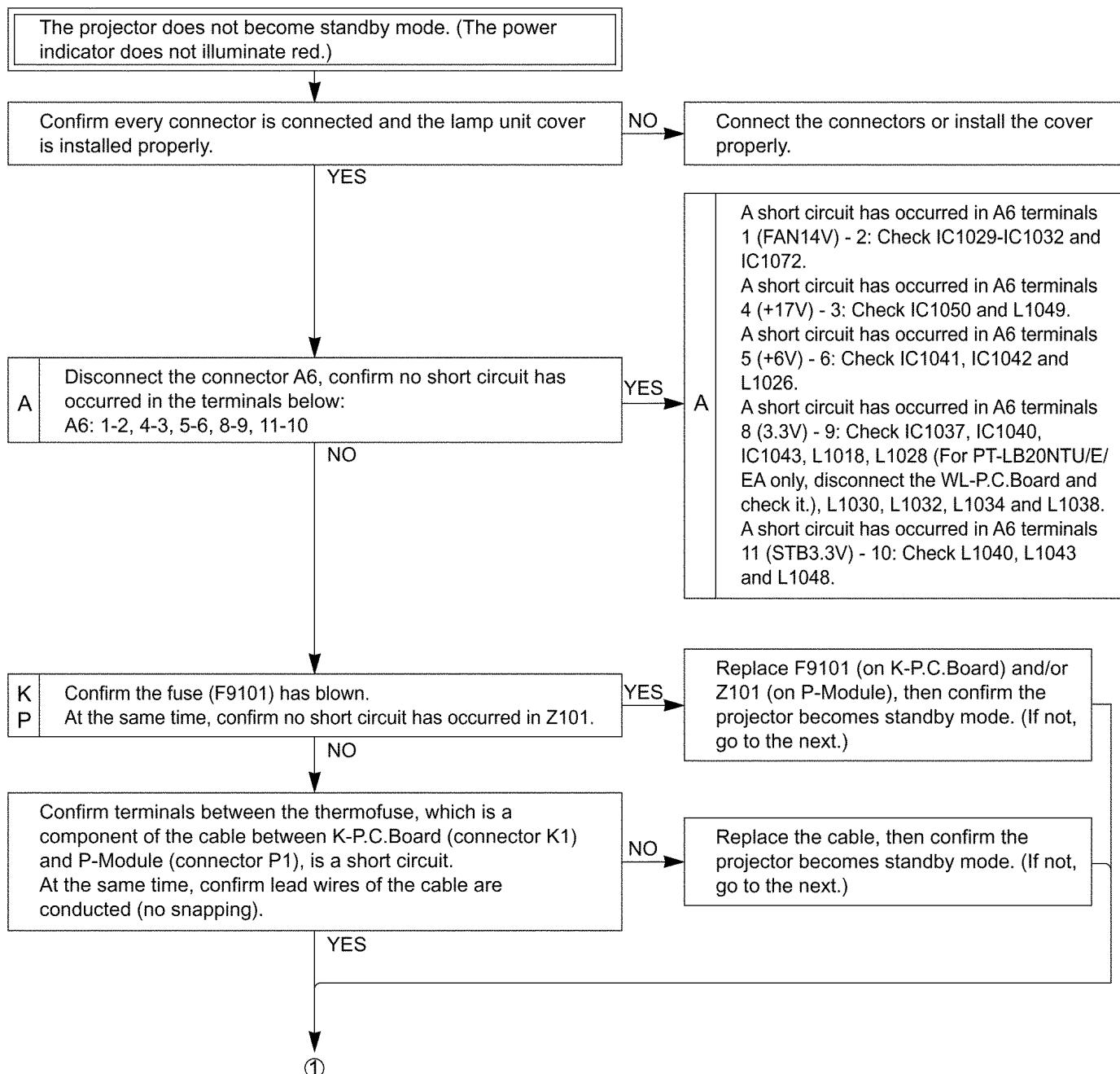
The letter of the alphabet indicates the P.C. Board or Module name.

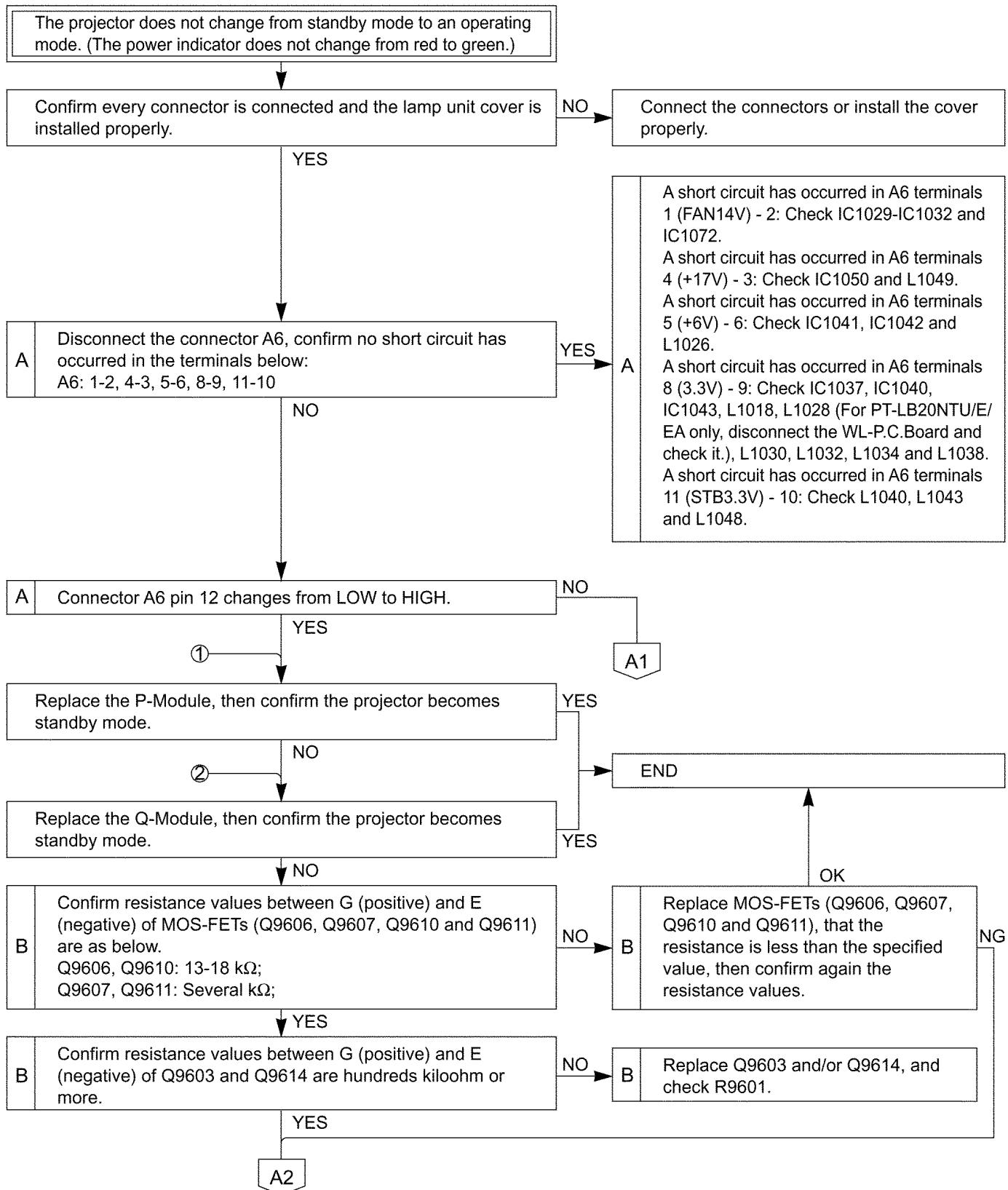
(Example) A: A-P.C. Board, B: B-Module

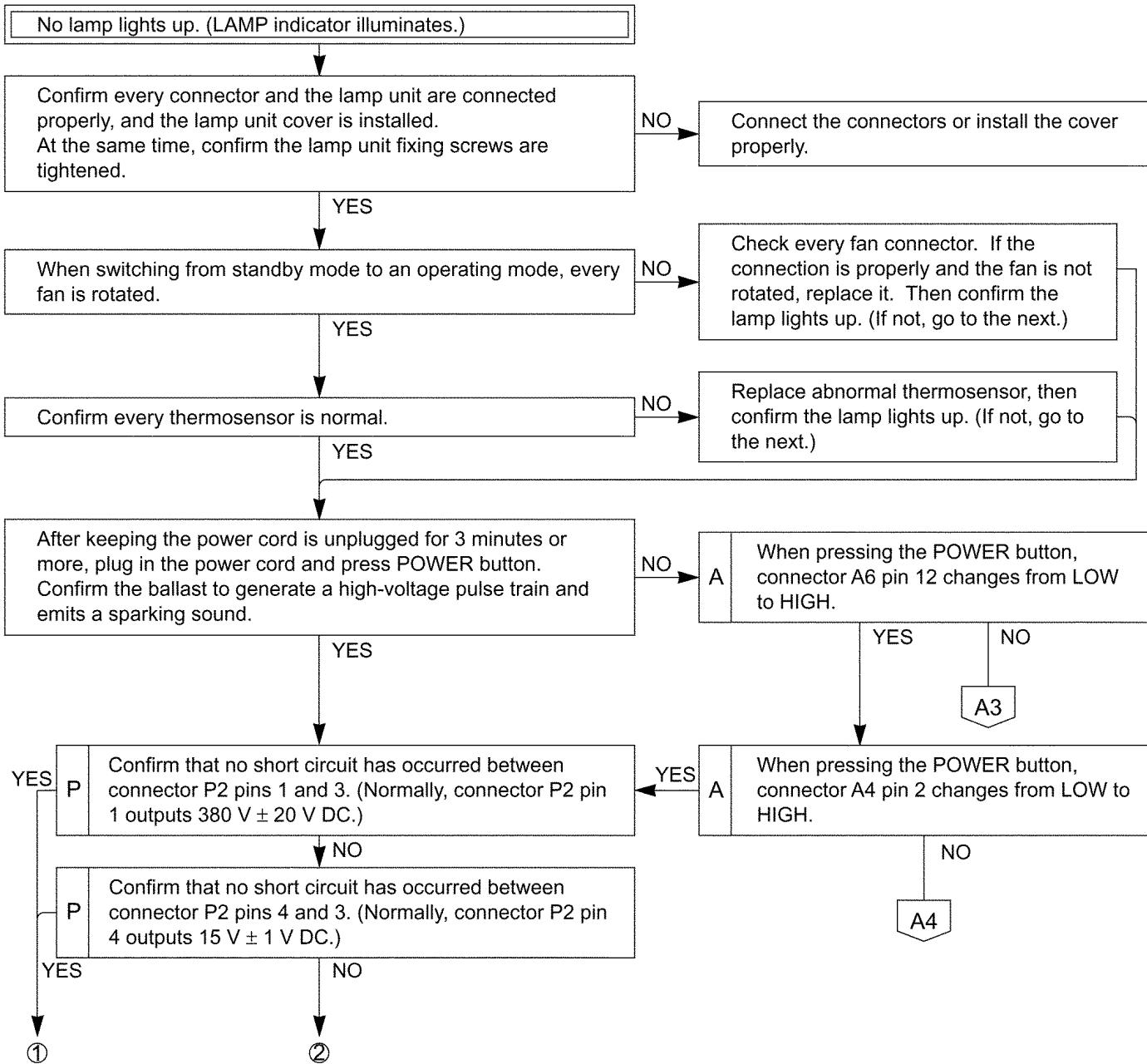
If replacing A-P.C. Board (assembly), read the ROM data from the old P.C. Board and write it in the new one according to the section 8.6. "Software for Adjustment". At this time, if the readout from the old P.C. Board does not succeed, remove IC1011 and IC1017 from the old P.C. Board and install them on the new one.

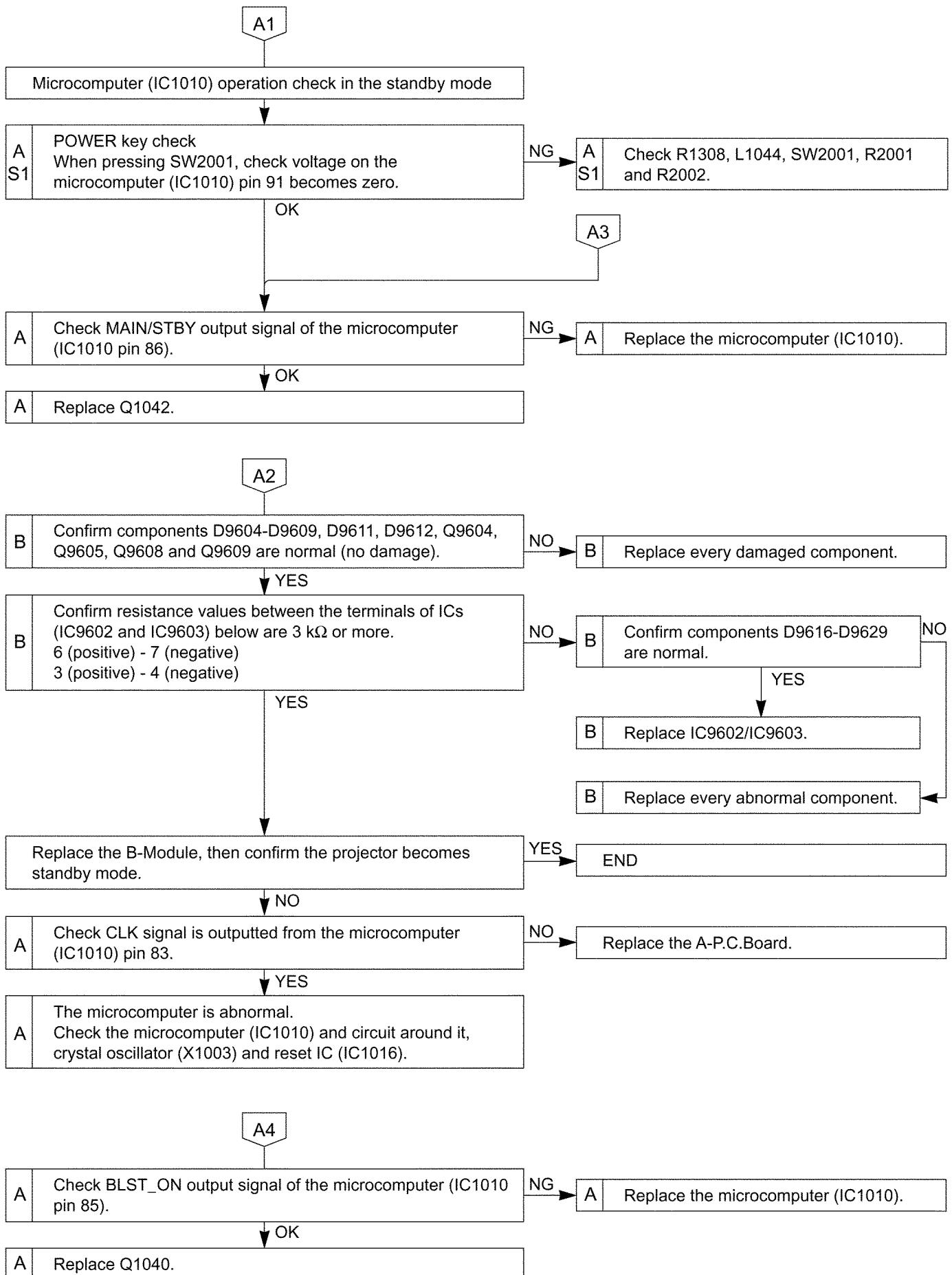
If replacing A-P.C. Board (assembly), adjust the RGB Input Level according to the chapter 8.8. "Input Level Adjustment".

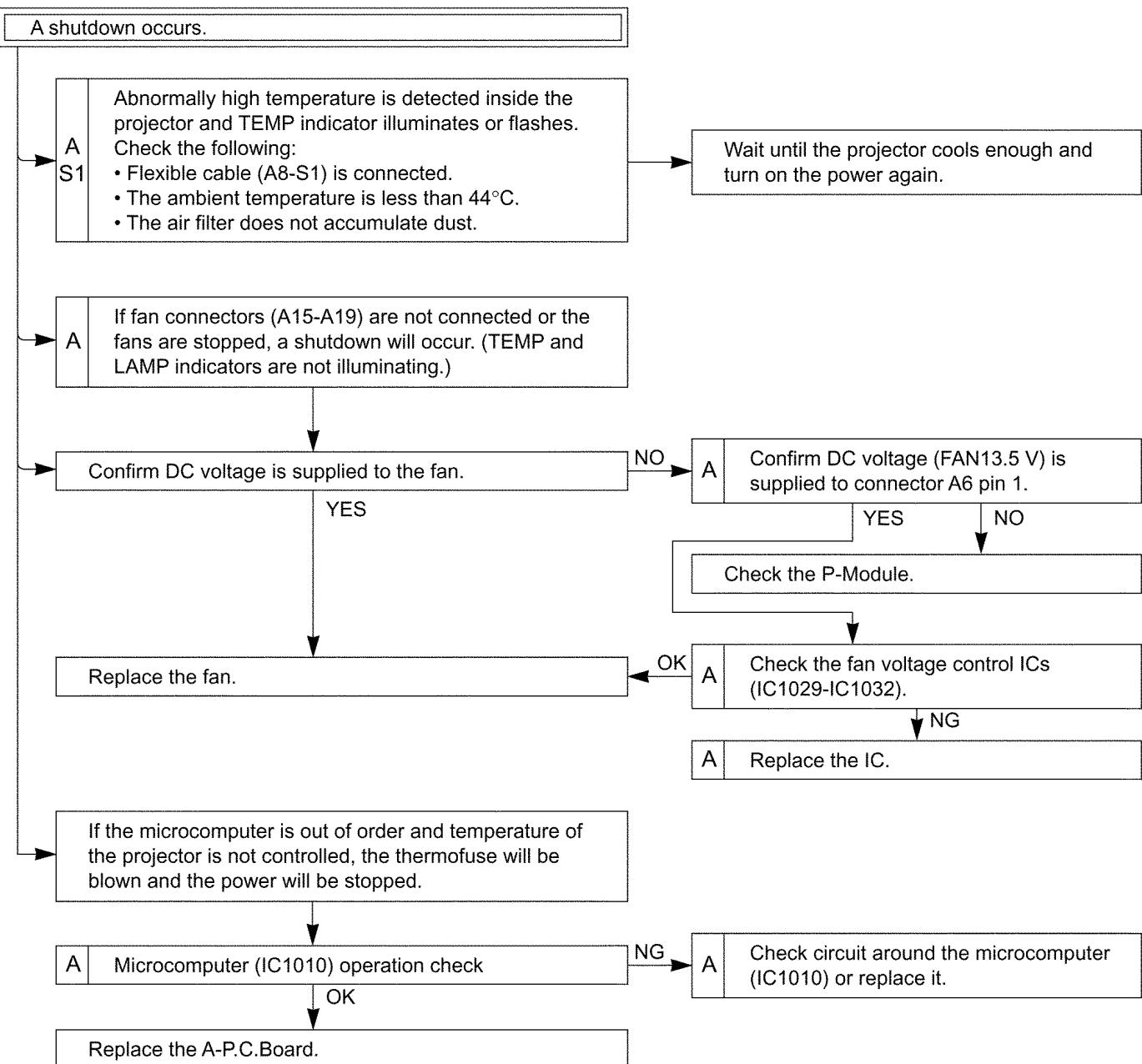
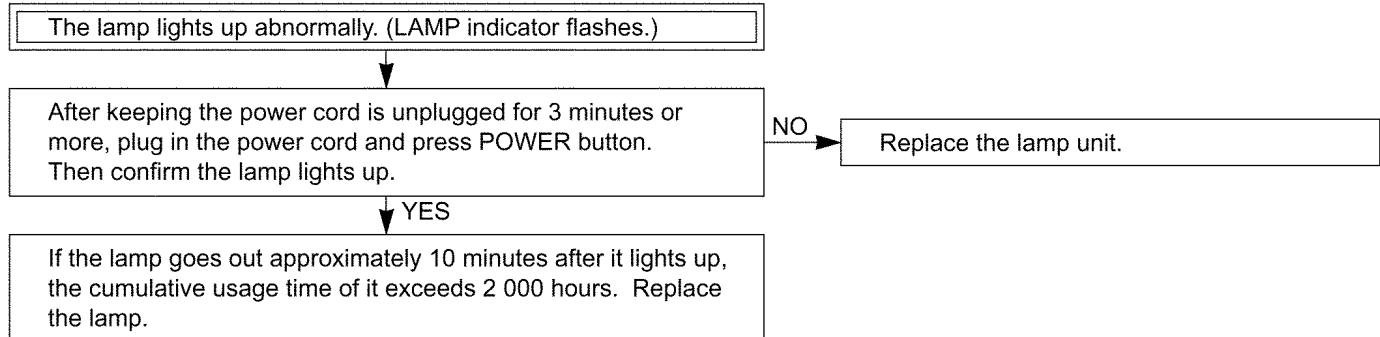
If replacing A-P.C. Board (assembly), set Model Information according to the chapter 8.9. "Model Information Setup".

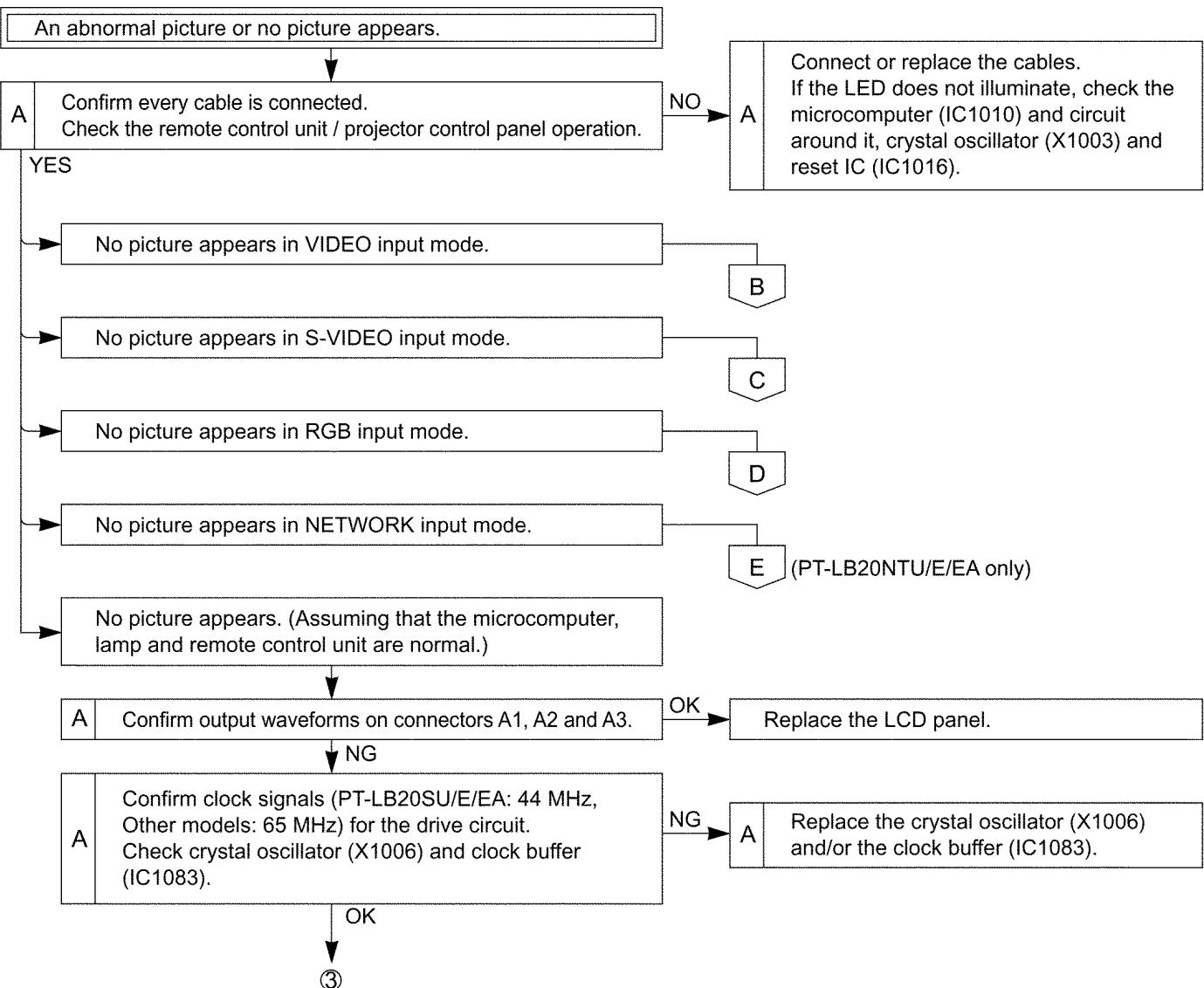


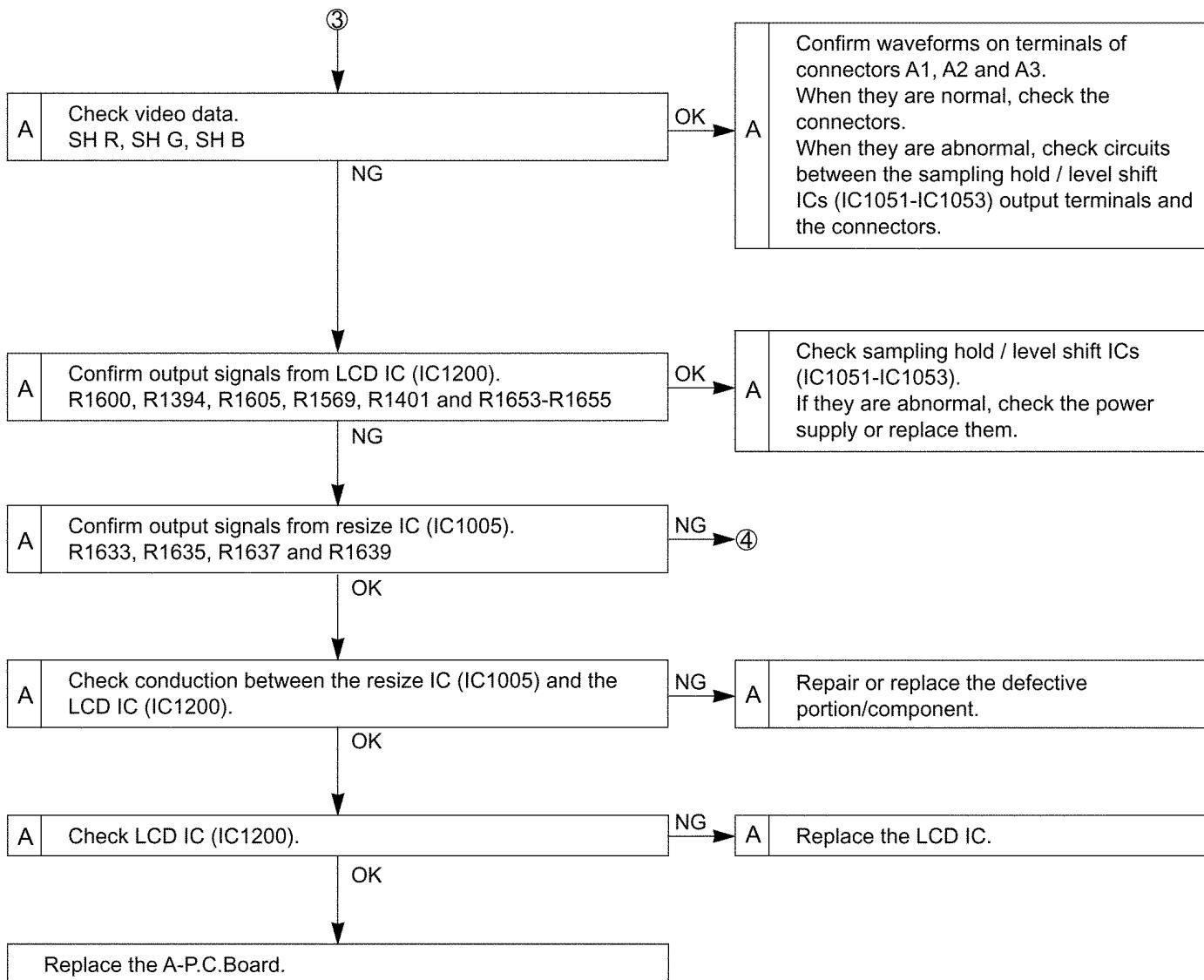


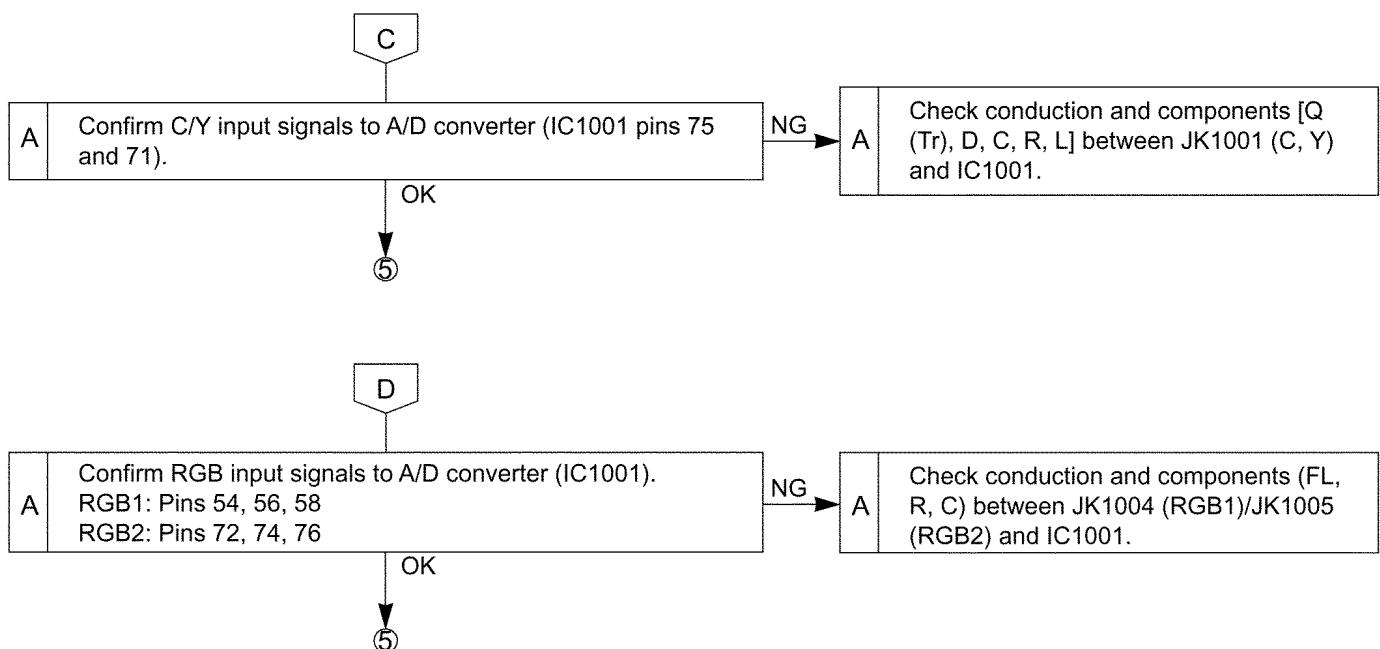
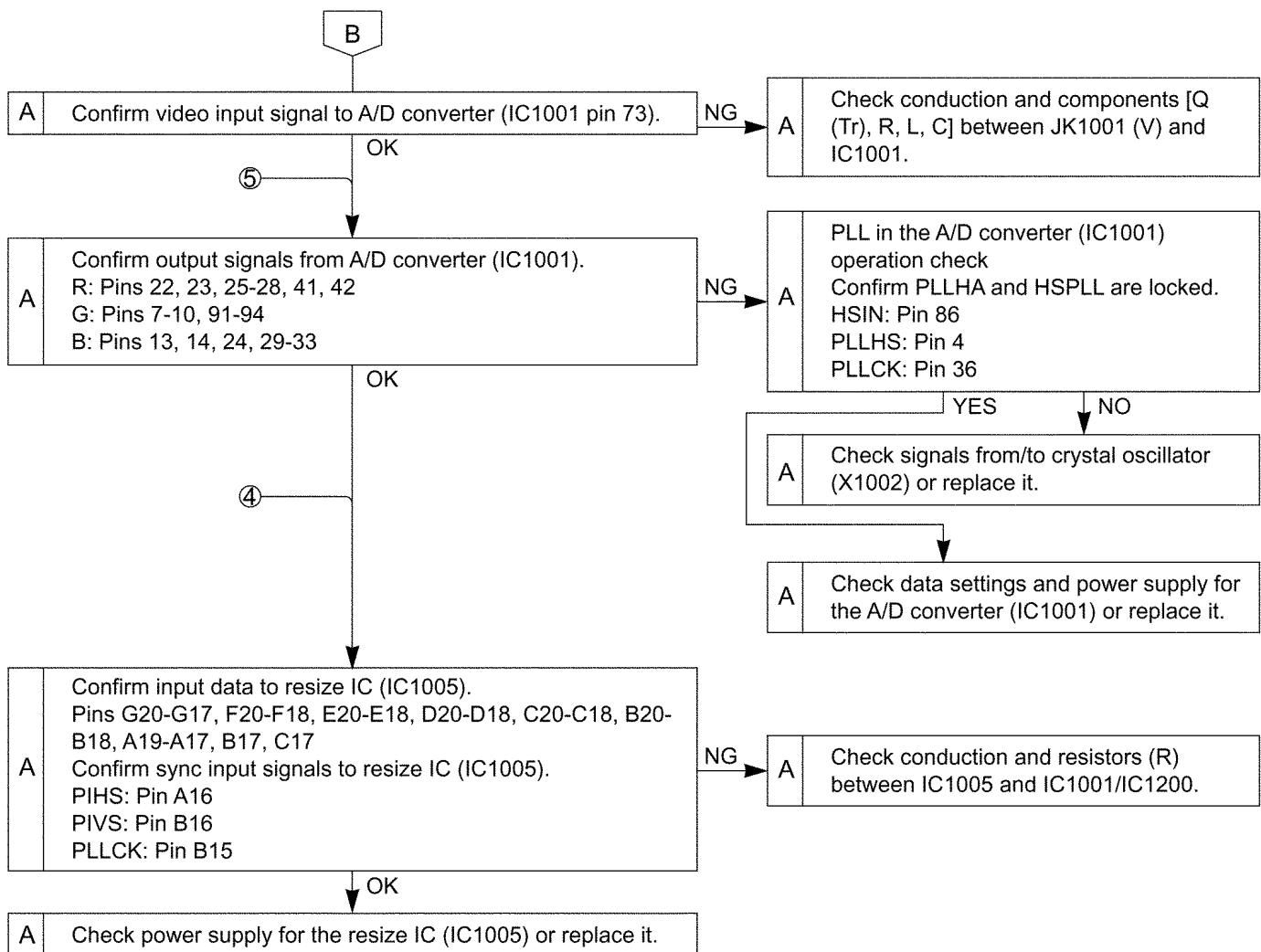


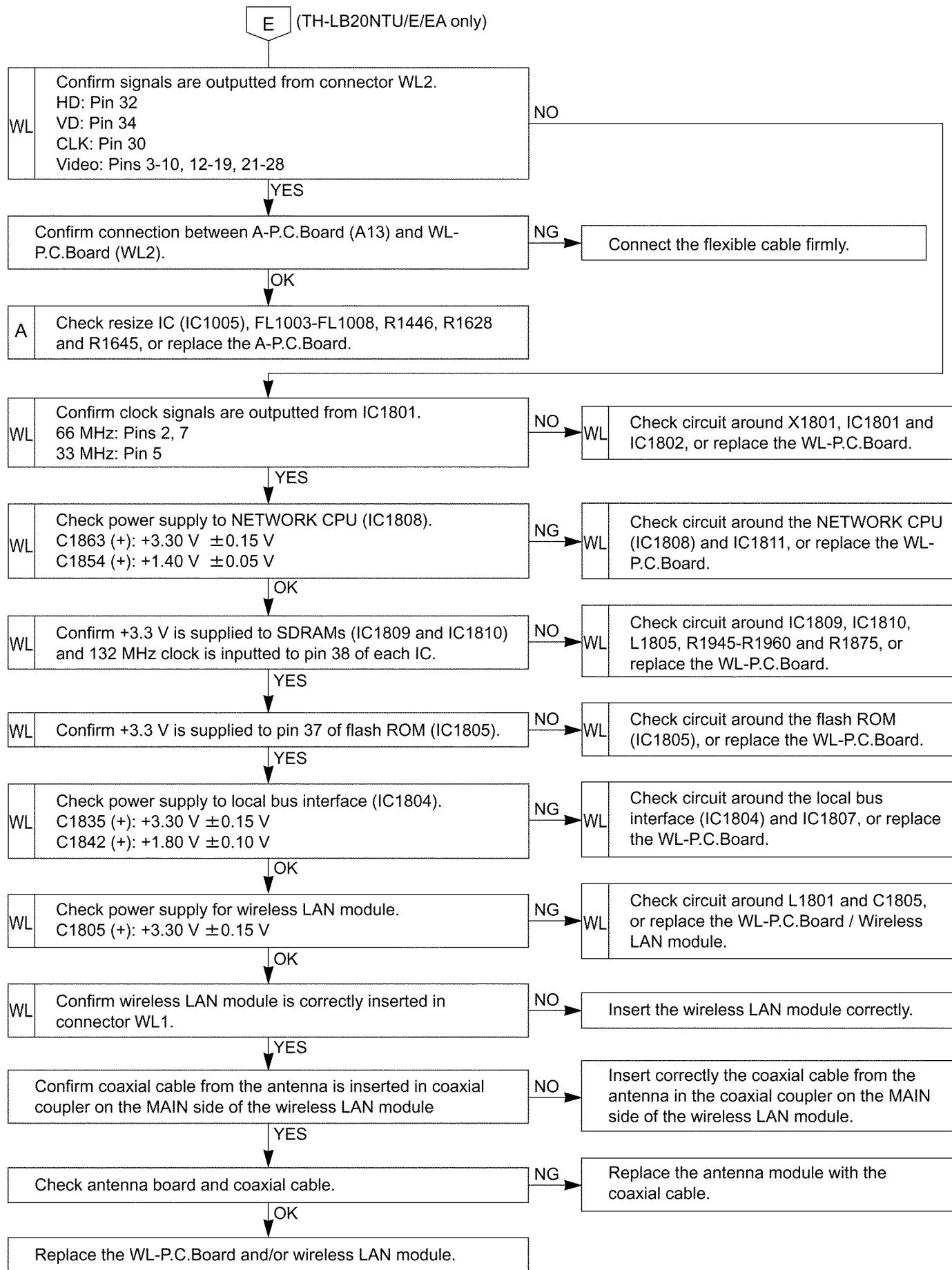


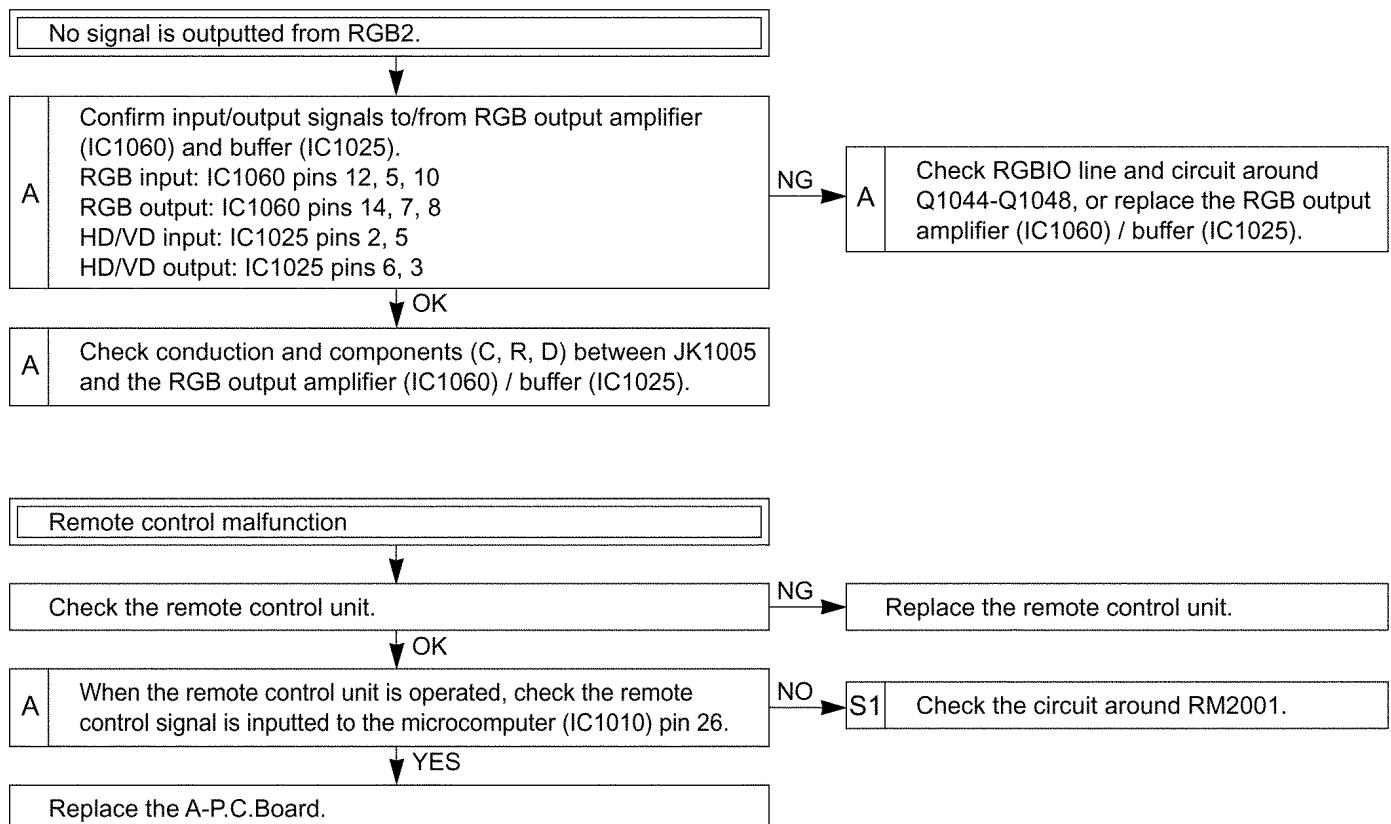




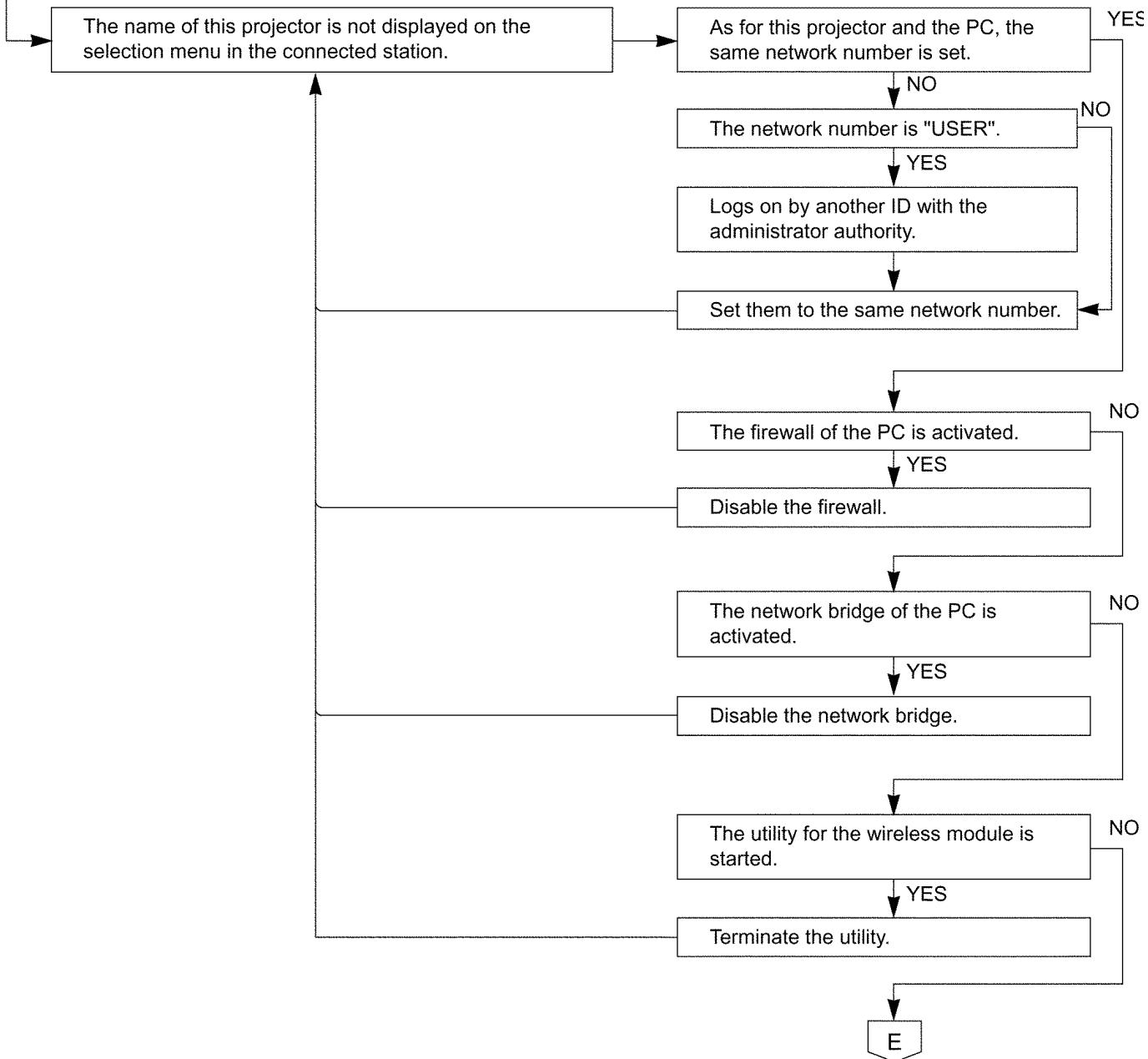








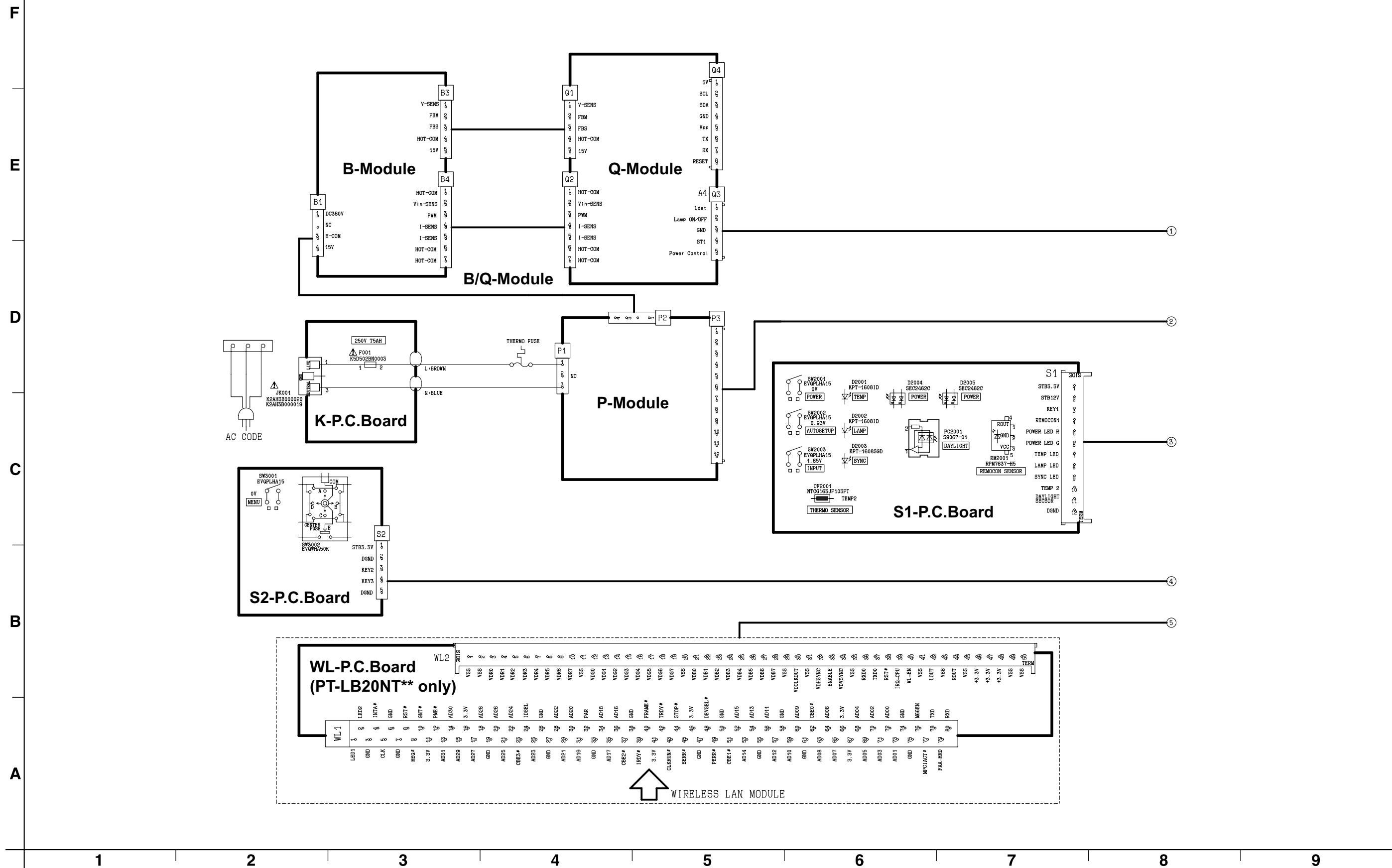
Defect of Network function (Checks by using Wireless Manager) [PT-LB20NTU/E/EA only]



# 10 Interconnection Block Diagram

## 10.1. Interconnection Block Diagram (1/2)

Interconnection Block Diagram (1/2)



## 10.2. Interconnection Block Diagram (2/2)

Interconnection Block Diagram (2/2)

F

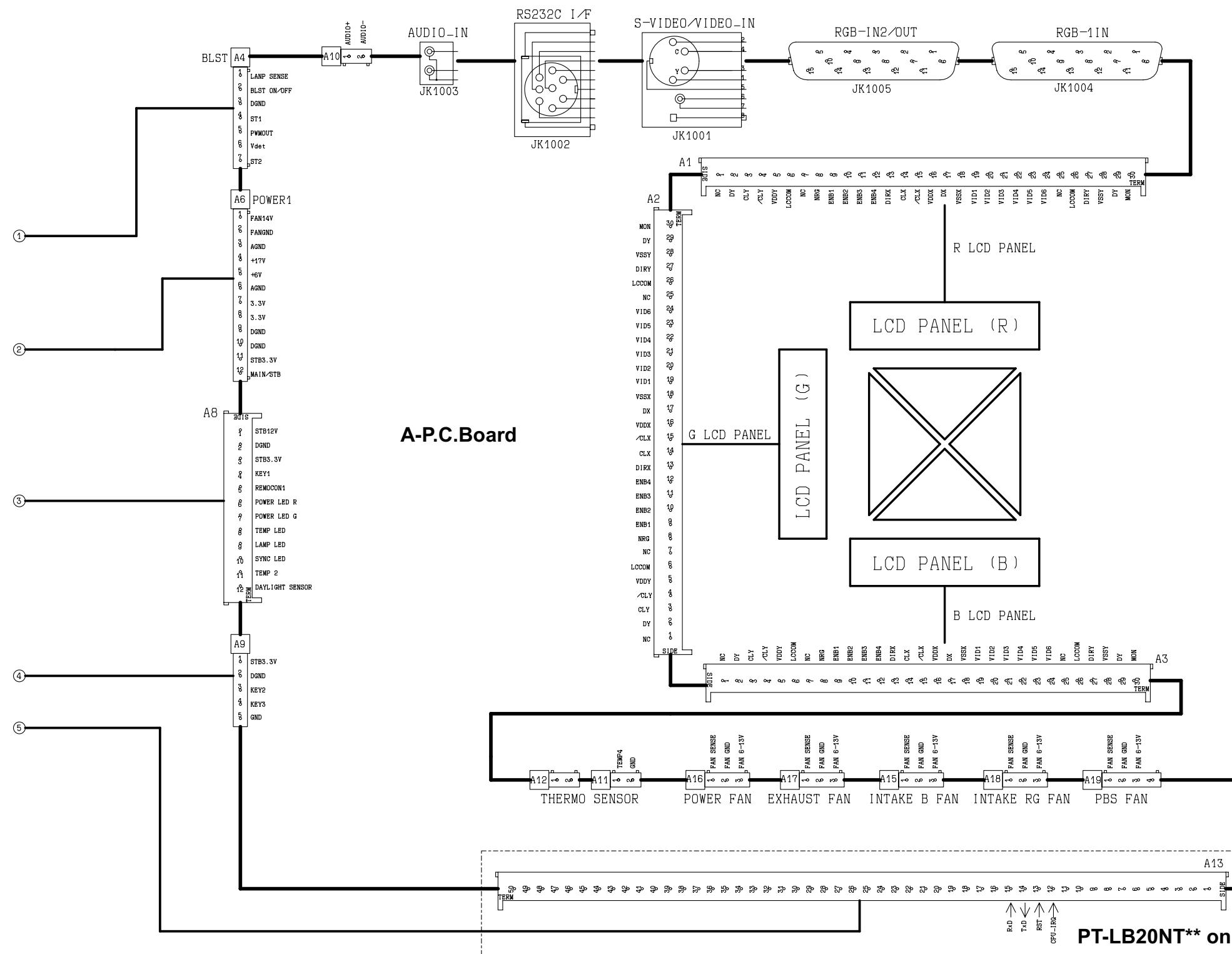
E

D

C

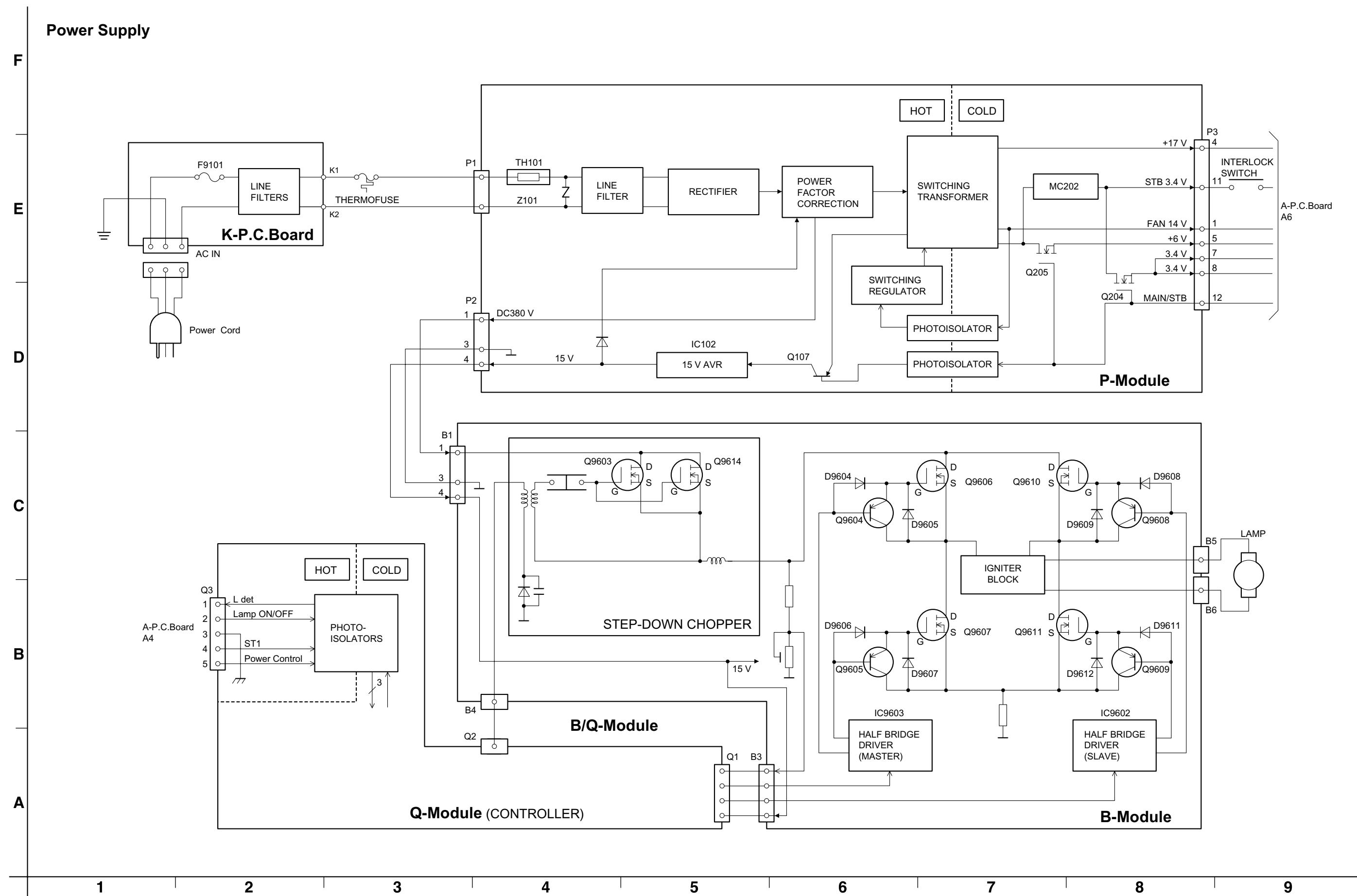
B

A



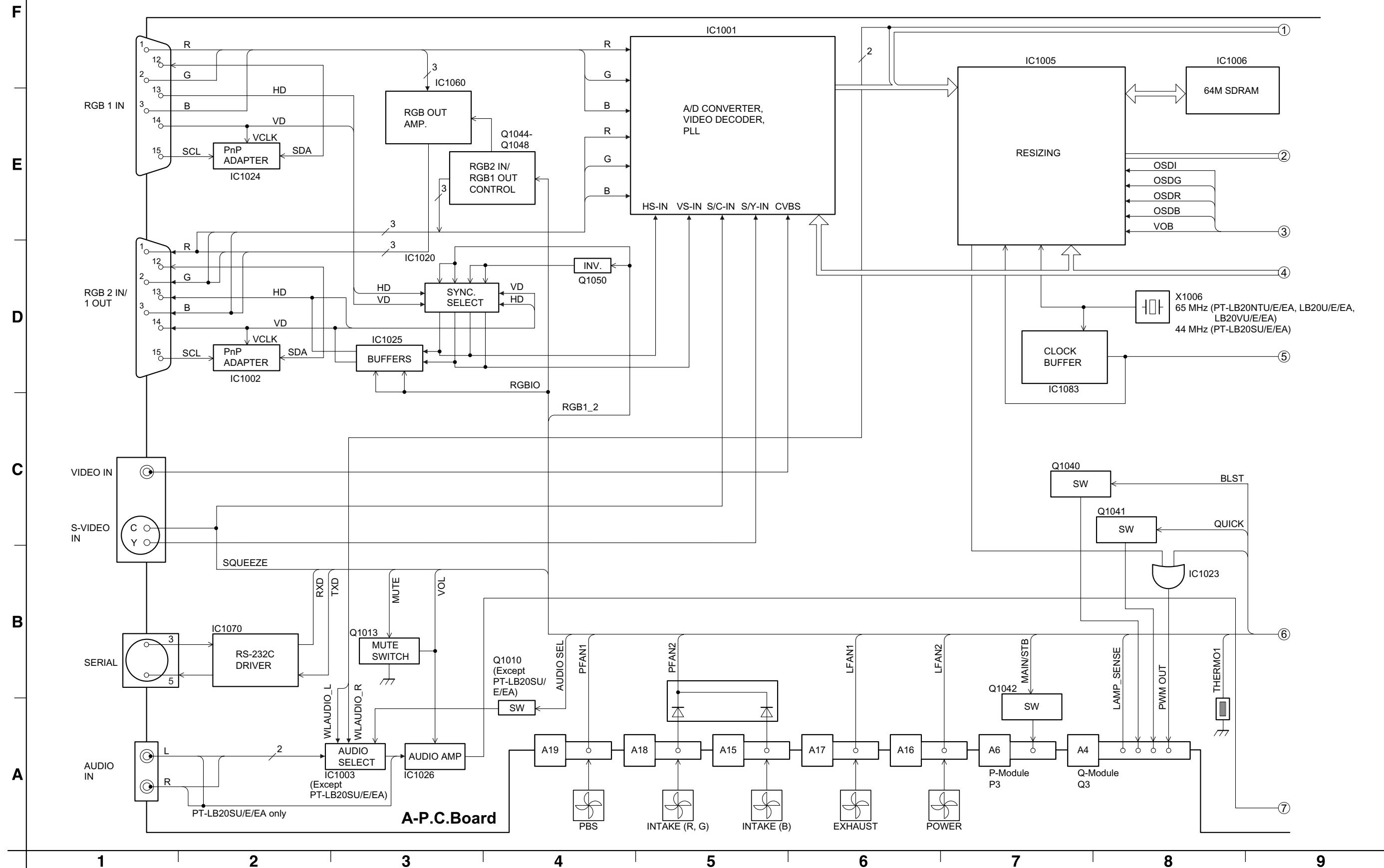
# 11 Block Diagram

## 11.1. Power Supply

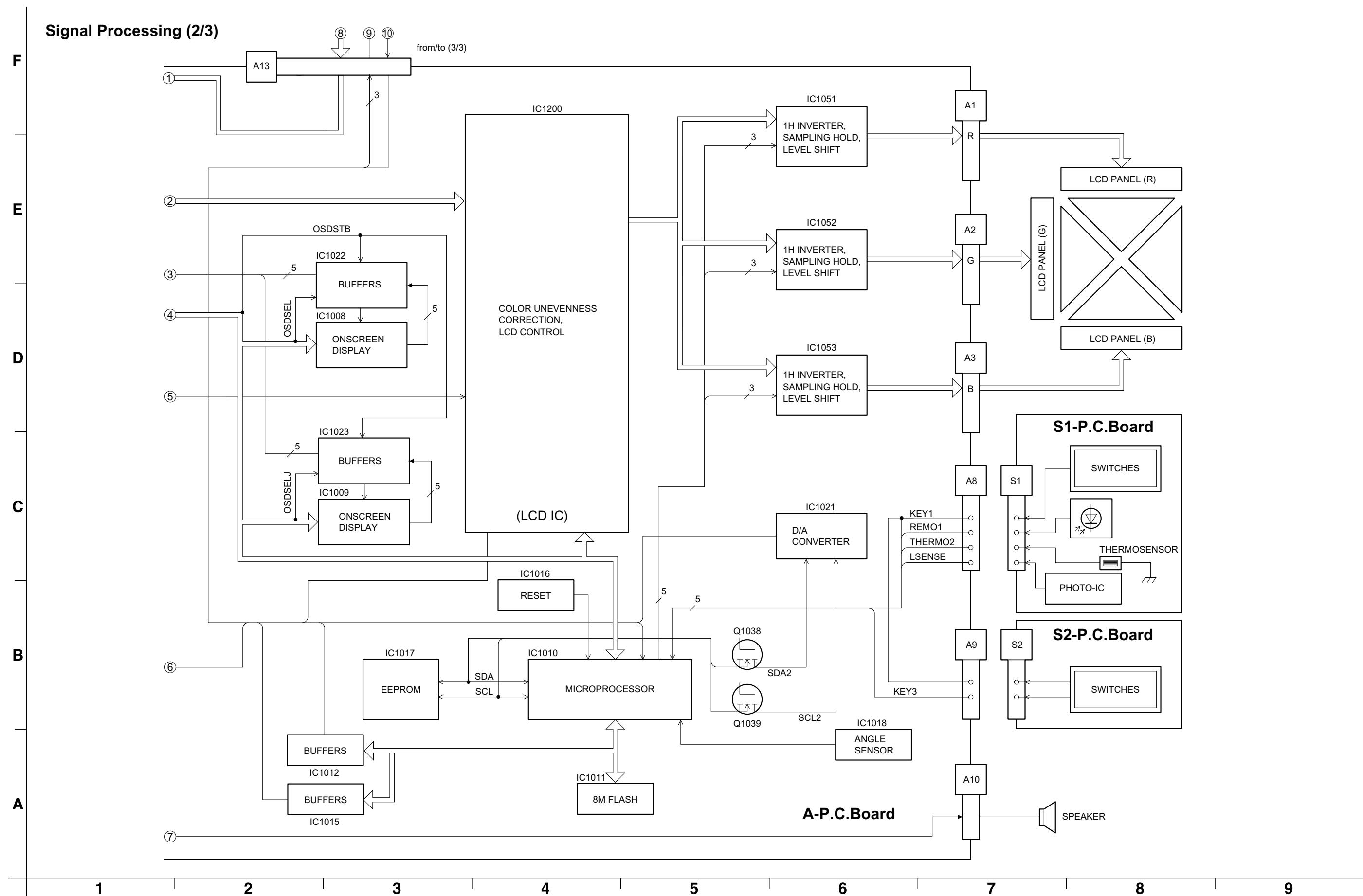


## 11.2. Signal Processing (1/3)

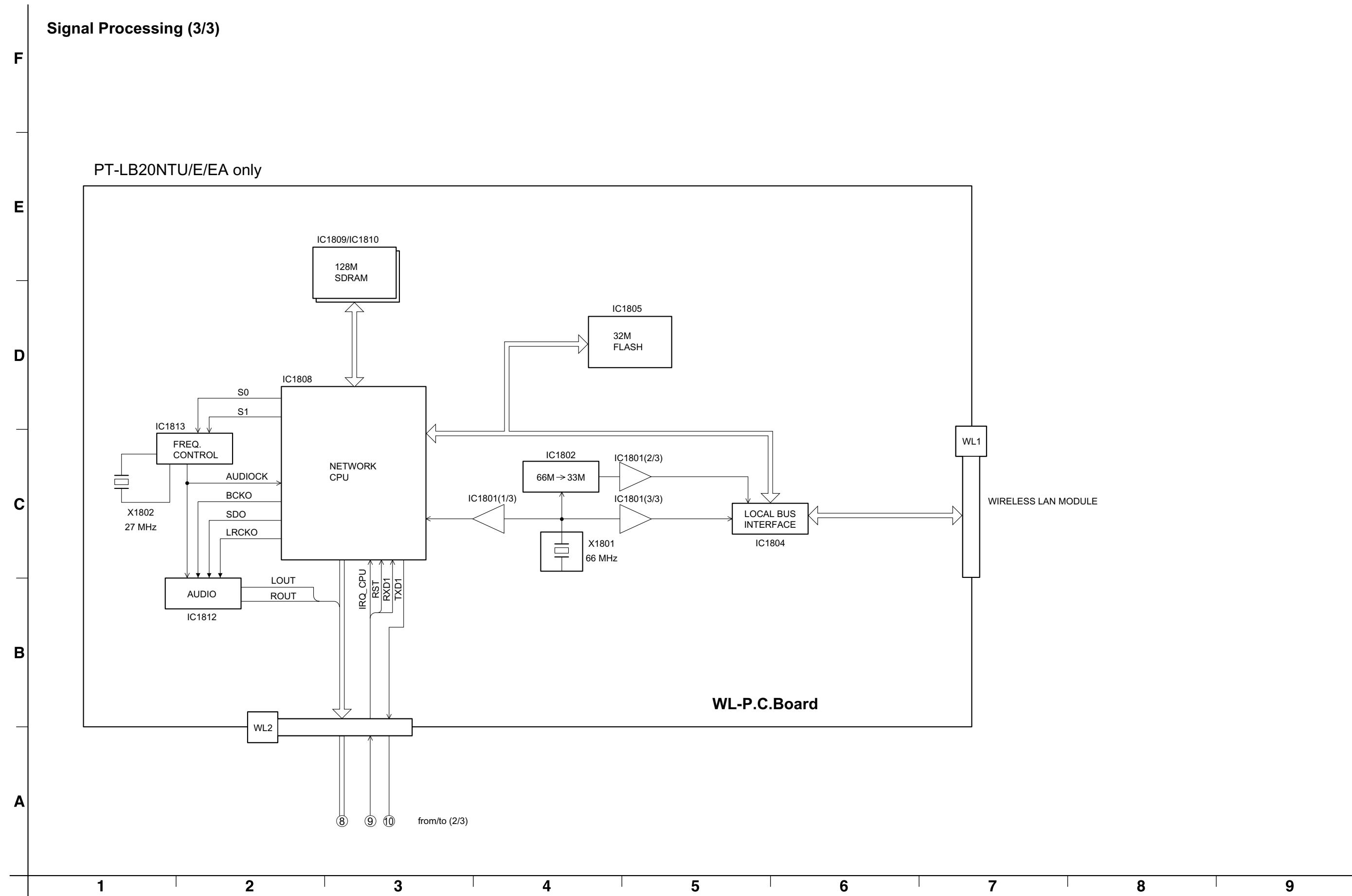
## Signal Processing (1/3)



### 11.3. Signal Processing (2/3)



## 11.4. Signal Processing (3/3)



## 12 Schematic Diagram

### Schematic Diagram for Model PT-LB20NTU/LB20U/LB20SU/LB20VU

#### IMPORTANT SAFETY NOTICE

THE SHADED AREA ON THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES IMPORTANT FOR PROTECTION FROM FIRE AND ELECTRICAL SHOCK HAZARDS.  
WHEN SERVICING, IT IS ESSENTIAL THAT ONLY MANUFACTURER'S SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS IN THE SHADED AREAS OF THE SCHEMATIC.

### Schematic Diagram for Model PT-LB20NTE/EA, LB20E/EA, LB20SE/EA, LB20VE/EA

#### Important Safety Notice

Components identified by the international symbol  have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified ones.

#### Notes:

##### 1. Resistor

All the resistors are carbon 1/4W resistors, unless marked as follows: The unit of resistance is an OHM [ $\Omega$ ] ( $K=1\ 000\ M=1\ 000\ 000$ ).

 : Nonflammable       : Metal Oxide

 : Solid       : Metal Film

 : Wire Wound       : Fuse

##### 2. Capacitor

 : Temperature Compensation       : Electrolytic

 : Polyester       : Bipolar

 : Metallized Polyester       : Dipped Tantalum

 : Polypropylene       : Z-Type

##### 3. Coil

The unit of inductance is a H, unless otherwise noted.

##### 4. Test Point

 : Test Point

##### 5. Voltage Measurement

The voltage is measured by an electronic voltmeter receiving the colorbar signal when all the customer's controls are set to the standard condition.

##### 6. Color code for the links between diagrams and circuit boards

From/To		To/From	Color code
Block diagram		Schematic diagram	Magenta
Schematic diagram		Schematic diagram	Green
Schematic diagram		Circuit boards	Yellow
Schematic diagram		Waveforms	Cyan (Light blue)

##### 7. HOT and COLD indications

The power circuit board contains a circuit area using a separate power supply to isolate the ground connection. The circuit is defined by HOT and COLD indications in the schematic diagram. Take the precautions below:

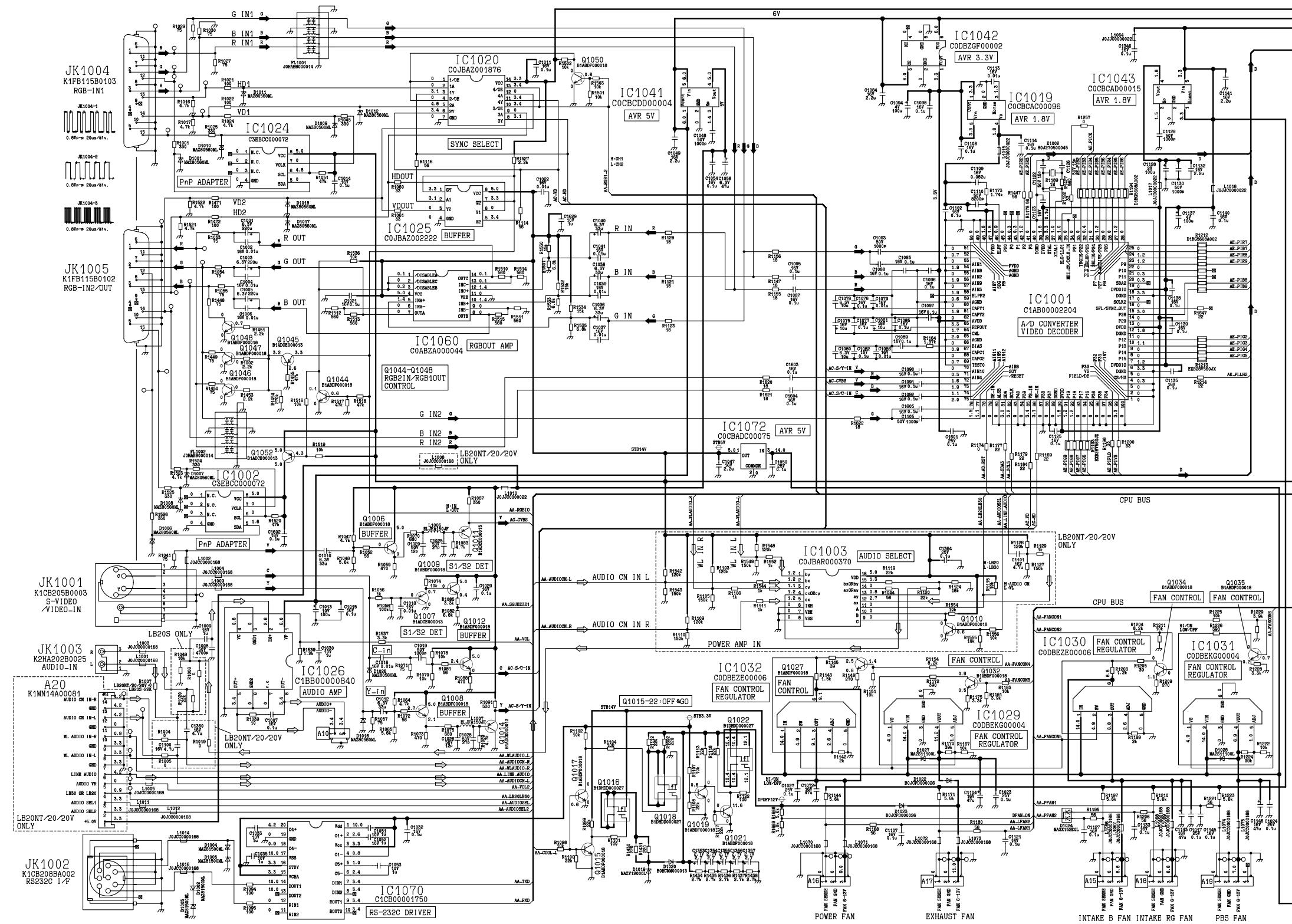
##### 8. This schematic diagram is the latest at the time of printing and the subject to change without notice.

#### Precautions:

1. NEVER touch the HOT part or the HOT and COLD parts at the same time, or you may get an electric shock.
2. NEVER short-circuit the HOT and COLD circuits, or the fuse may blow and the parts may break.
3. NEVER connect an instrument such oscilloscope to the HOT and COLD circuit simultaneously, or the fuse may blow. Connect the ground of instruments to the ground of the circuit being measured.
4. MAKE SURE to unplug the power cord from the power outlet before removing the chassis.

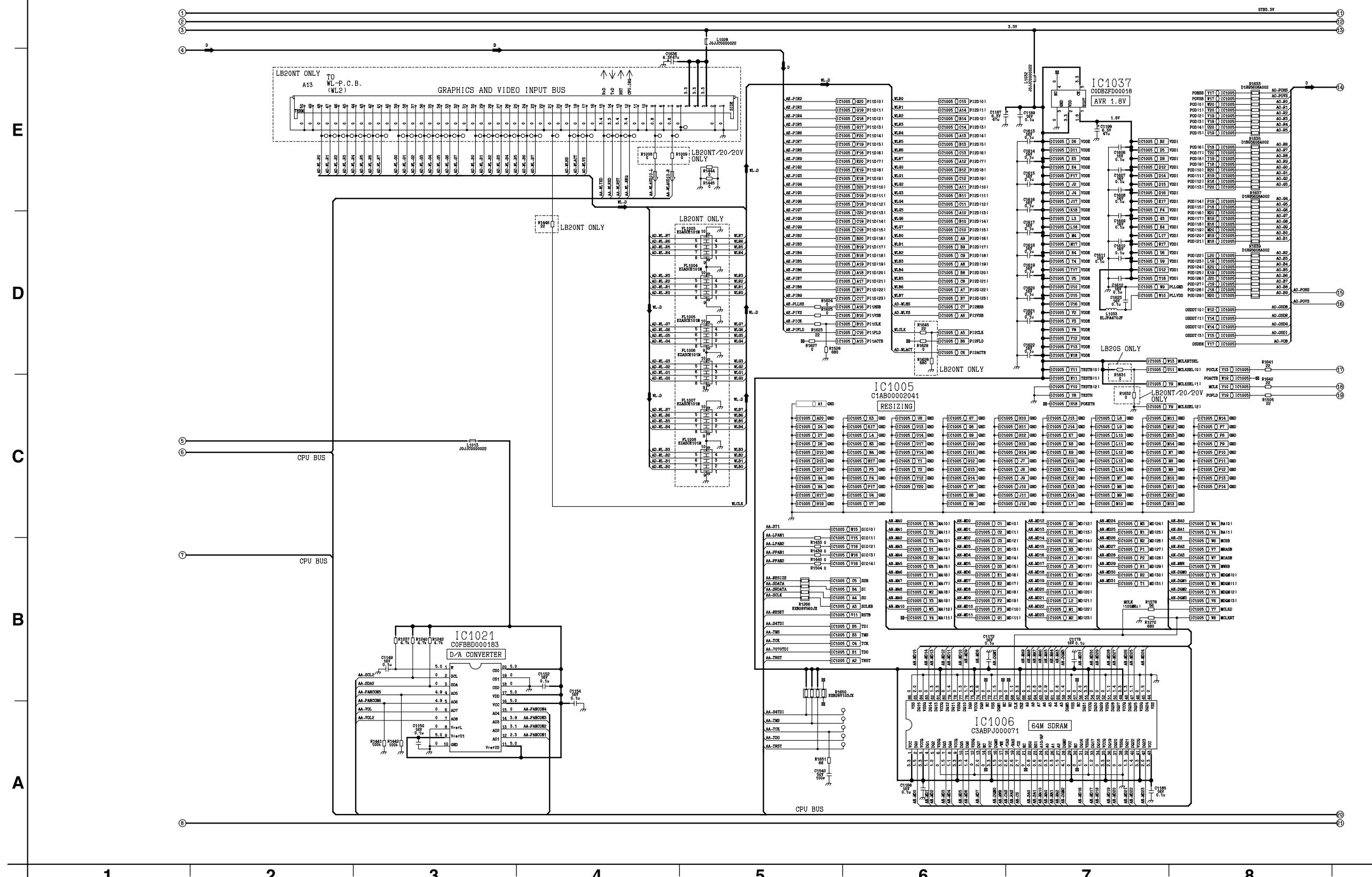
## 12.1. A-P.C.Board (1/4)

**A-P.C.Board (1/4) TXANP01VJZ5 (PT-LB20NT\*\*)  
TXANP01PYKZ (PT-LB20\*\*/LB20V\*\*)  
TXANP01PYMZ (PT-LB20S\*\*)**



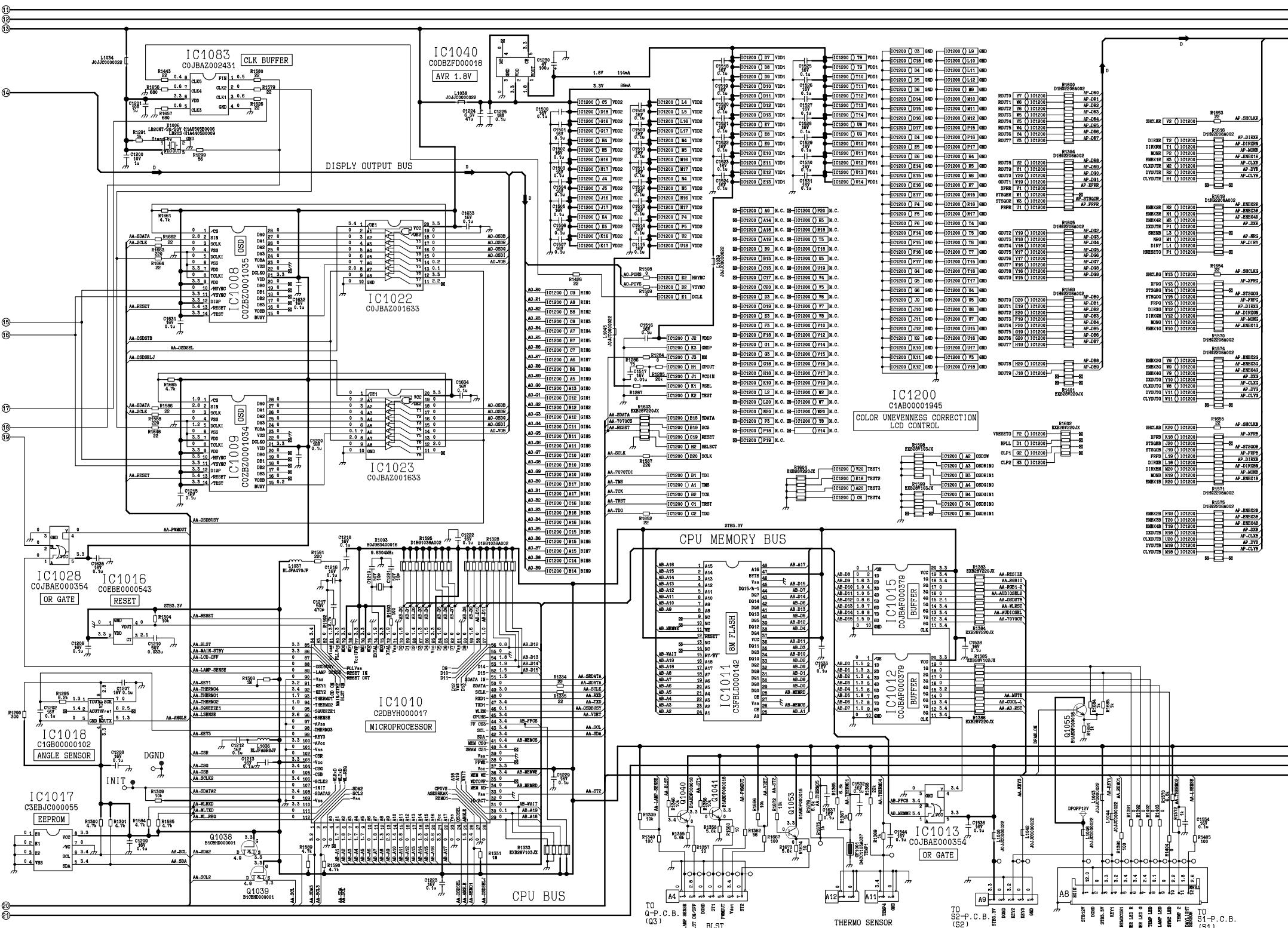
## 12.2. A-P.C.Board (2/4)

**A-P.C.Board (2/4)** TXANP01VJZ5 (PT-LB20NT\*\*)  
TXANP01PYKZ (PT-LB20\*\*/LB20V\*\*)  
TXANP01PYMZ (PT-LB20S\*\*)



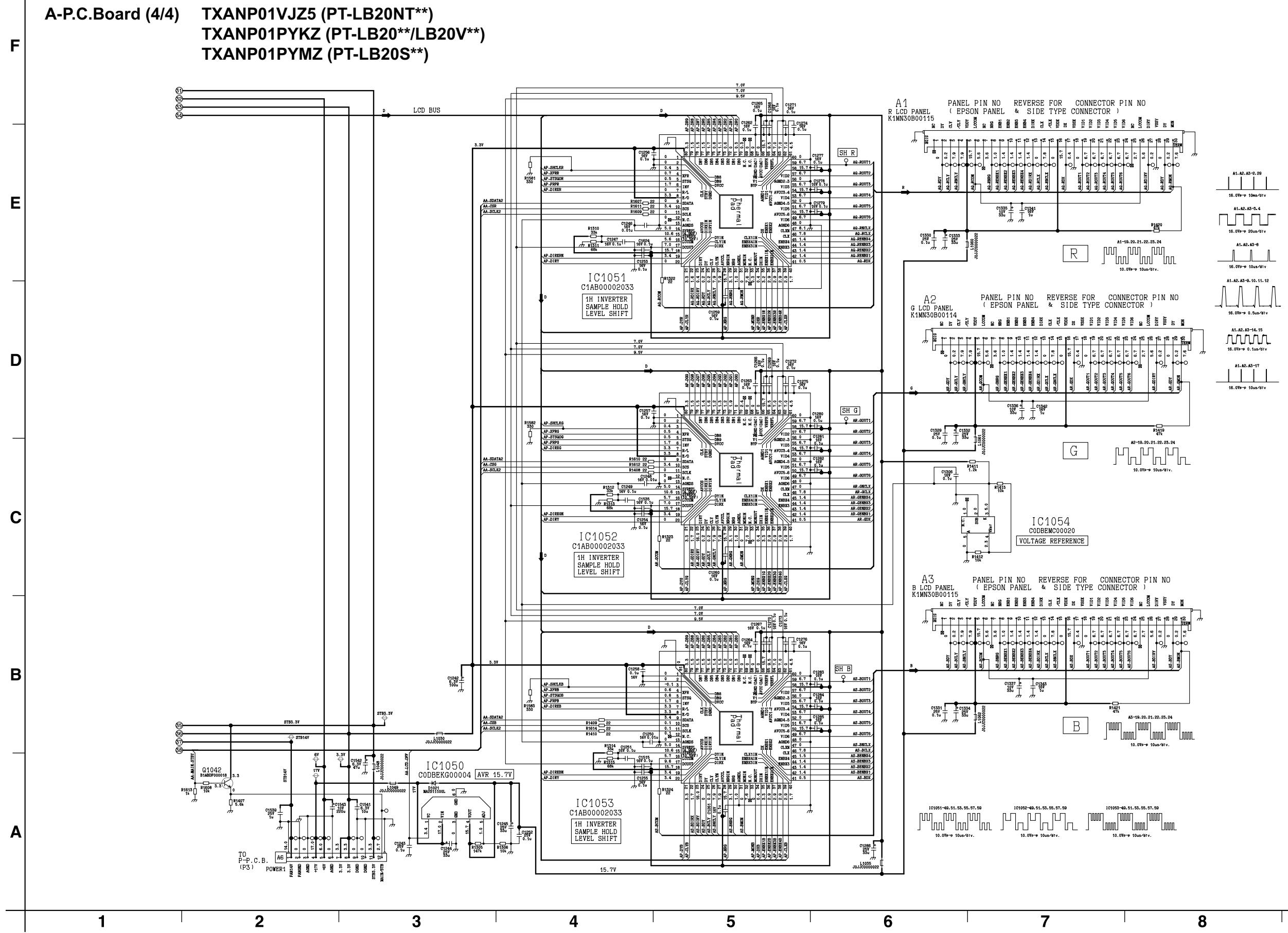
## 12.3. A-P.C.Board (3/4)

**A-P.C.Board (3/4) TXANP01VJZ5 (PT-LB20NT\*\*)  
TXANP01PYKZ (PT-LB20\*\*/LB20V\*\*)  
TXANP01PYMZ (PT-LB20S\*\*)**



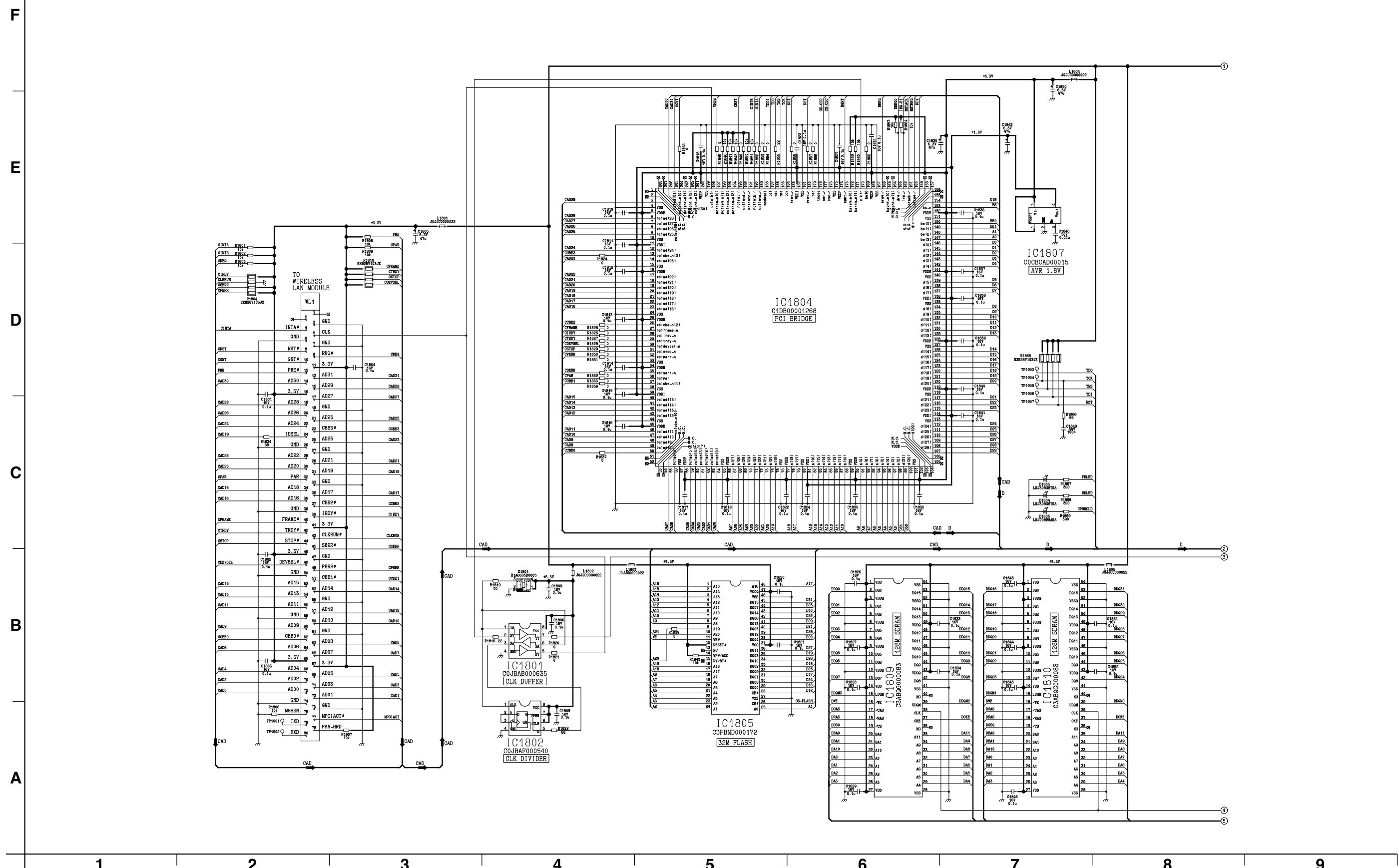
## 12.4. A-P.C.Board (4/4)

A-P.C.Board (4/4) TXANP01VJZ5 (PT-LB20NT\*\*)  
TXANP01PYKZ (PT-LB20\*\*/LB20V\*\*)  
TXANP01PYMZ (PT-LB20S\*\*)



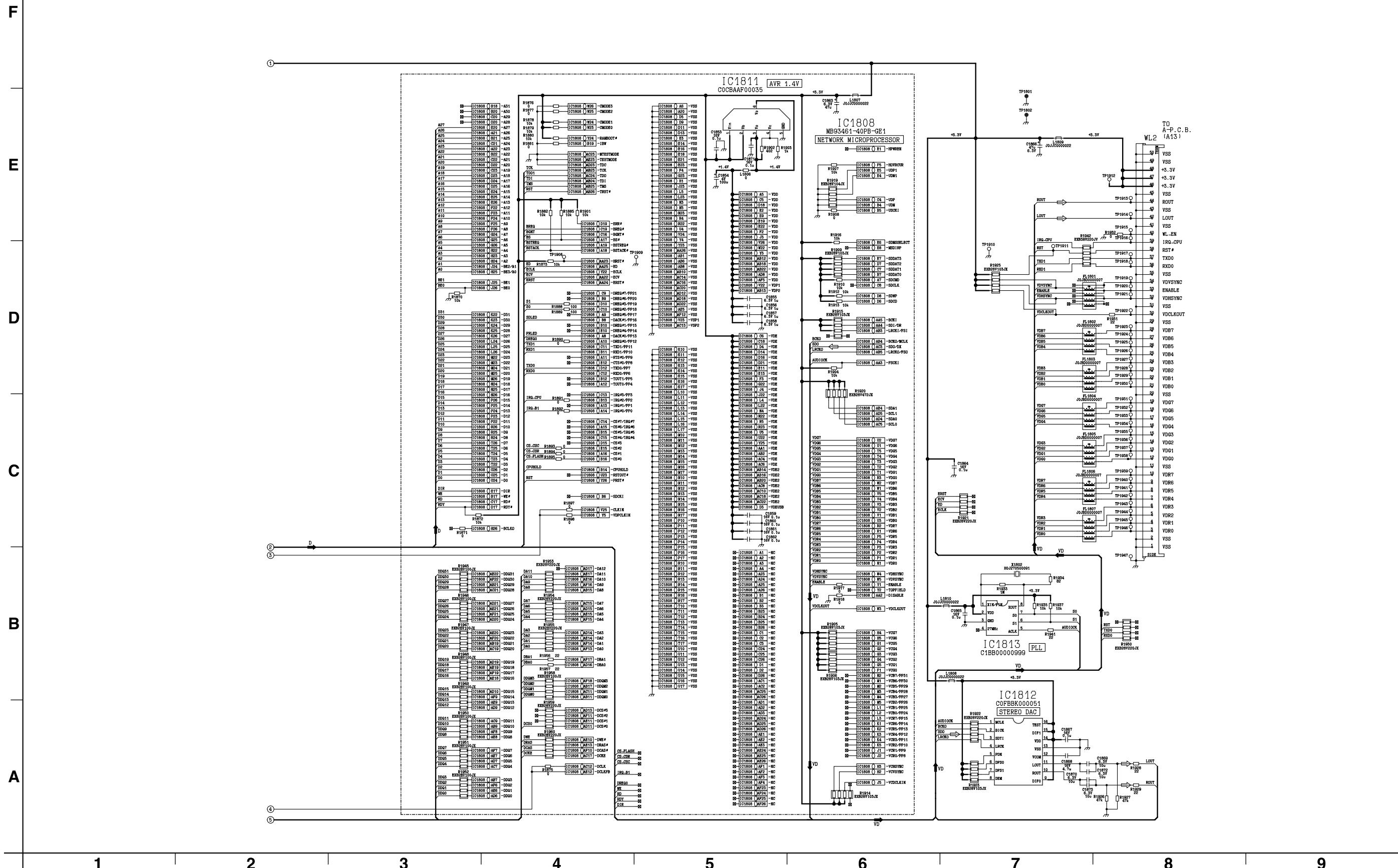
## 12.5. WL-P.C.Board (1/2)

WL-P.C.Board TNPA3595 (1/2) (PT-LB20NT\*\*)



## **12.6. WL-P.C.Board (2/2)**

WL-P.C.Board TNPA3595 (2/2) (PT-LB20NT\*\*)



## 12.7. B-Module (1/2)

### B-Module TXANP05VJZ5 (1/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29, R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5

F

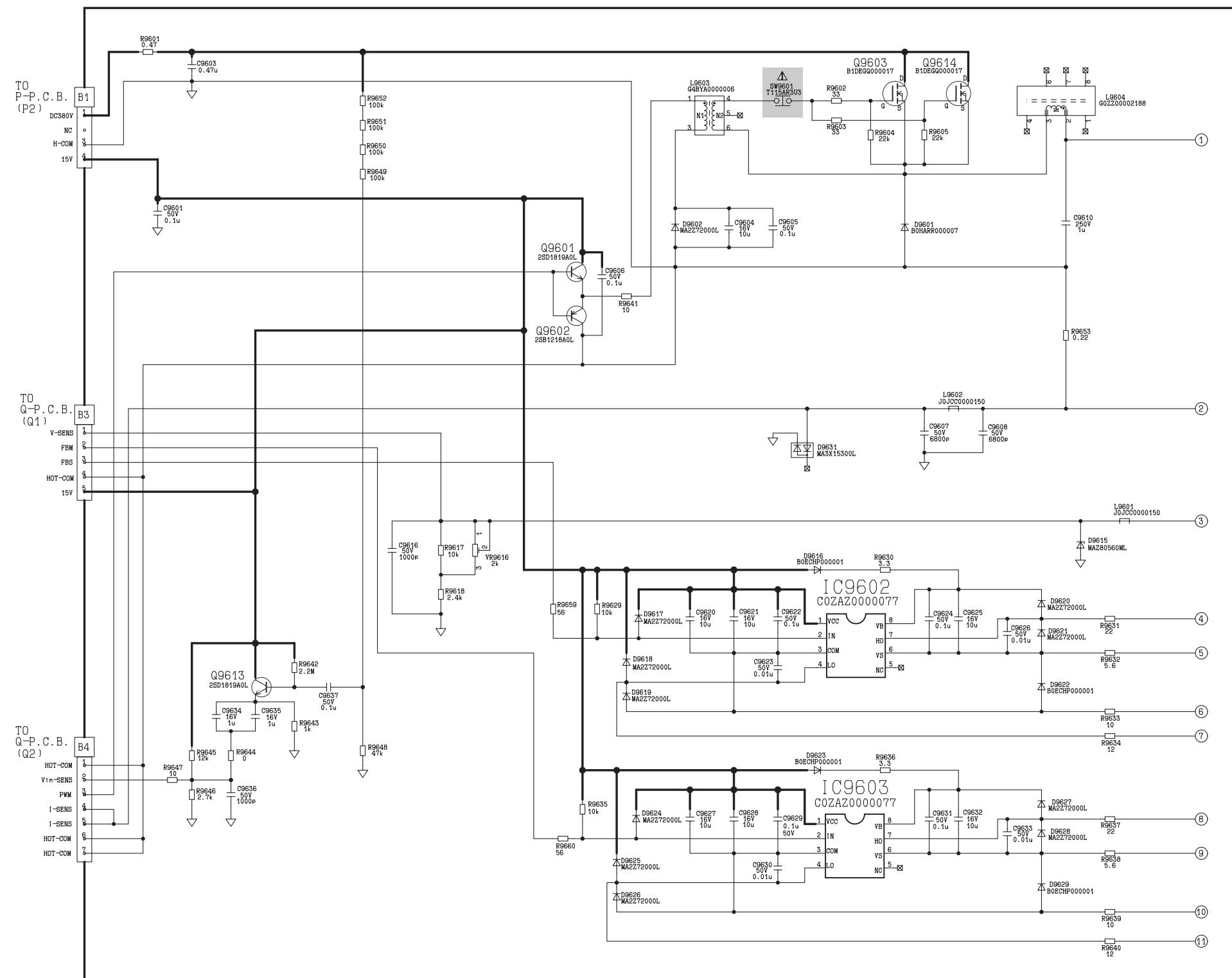
E

D

C

B

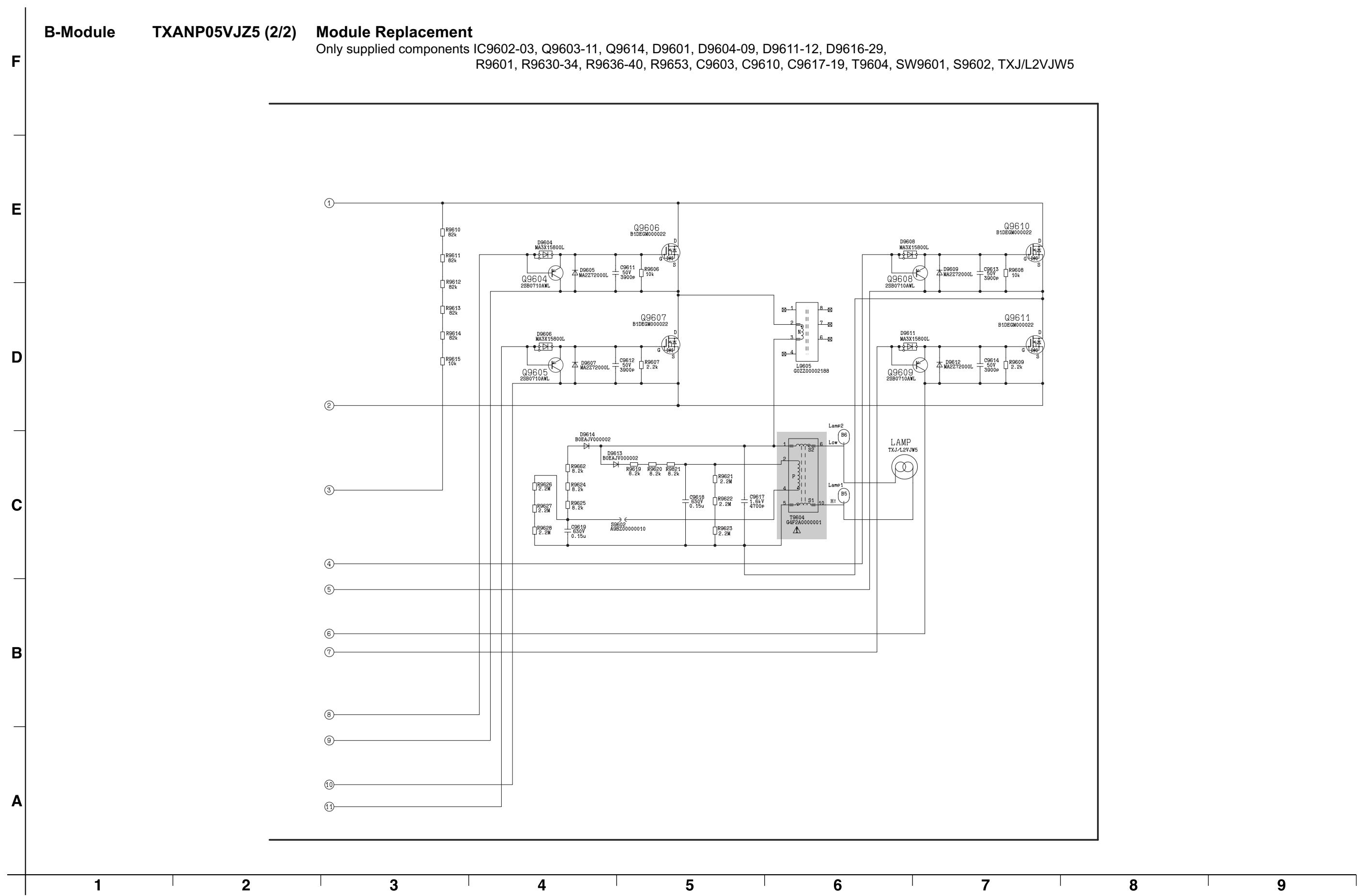
A



## 12.8. B-Module (2/2)

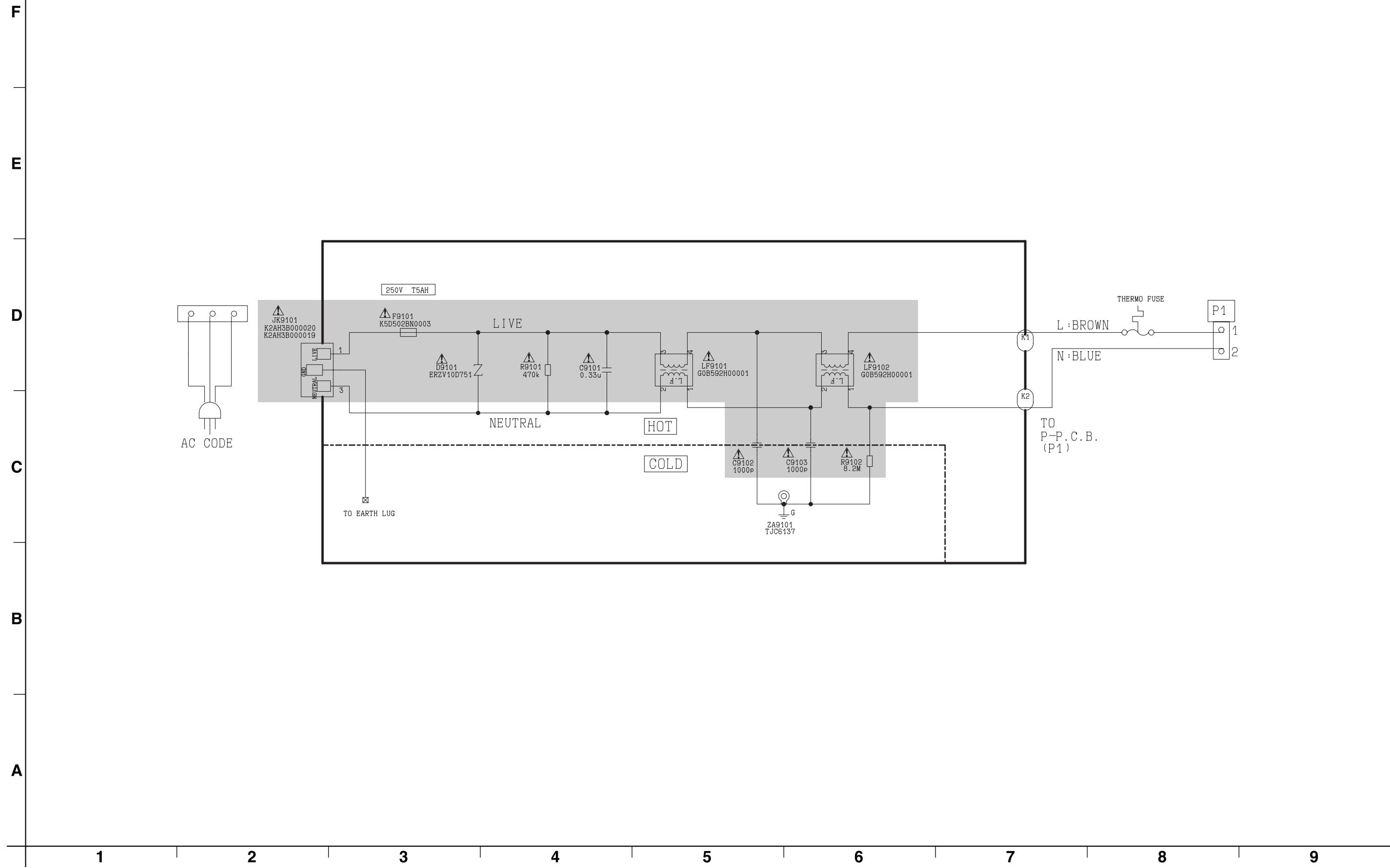
B-Module TXANP05VJZ5 (2/2) Module Replacement

Only supplied components IC9602-03, Q9603-11, Q9614, D9601, D9604-09, D9611-12, D9616-29,  
R9601, R9630-34, R9636-40, R9653, C9603, C9610, C9617-19, T9604, SW9601, S9602, TXJ/L2VJW5

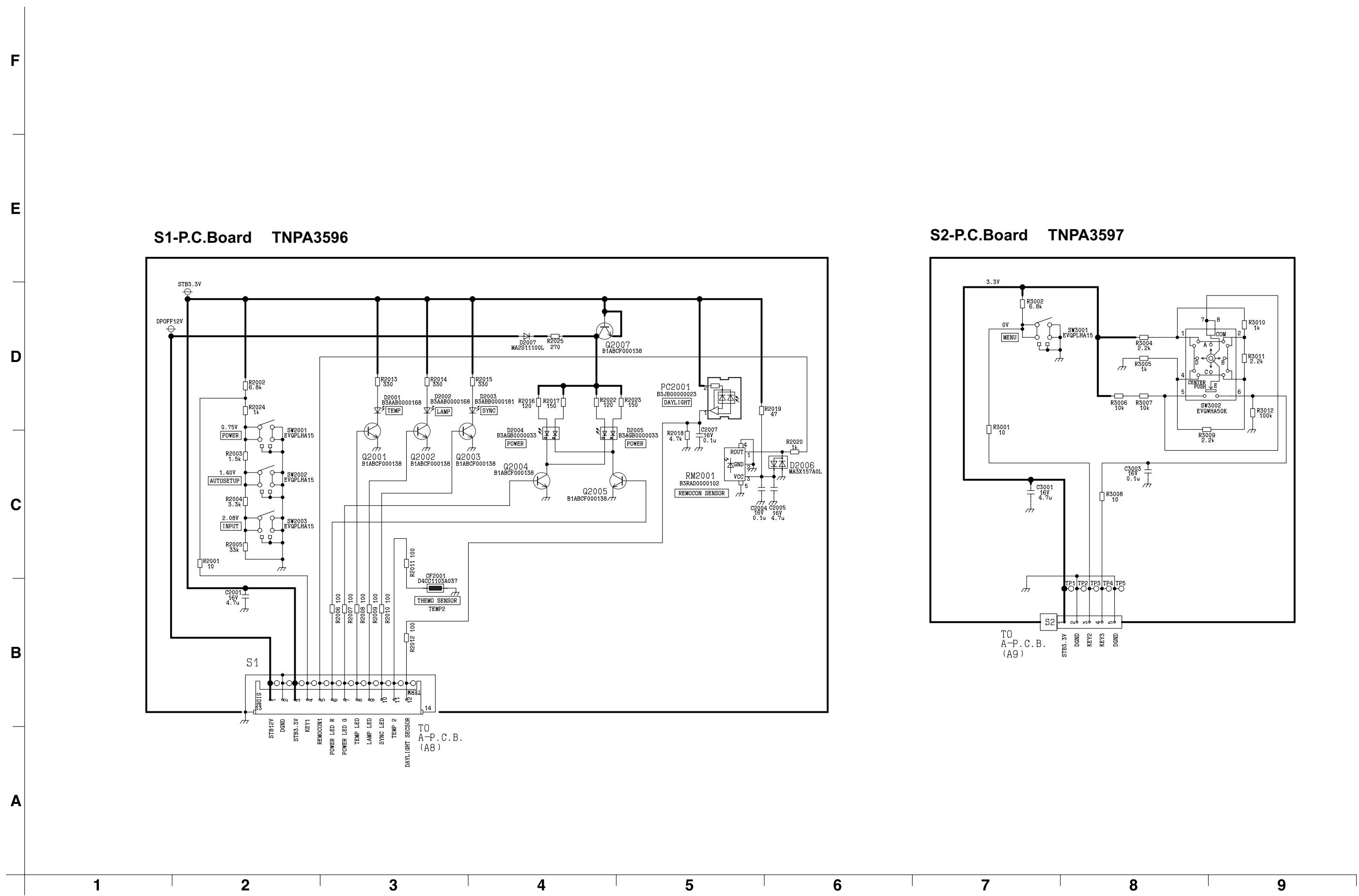


## 12.9. K-P.C.Board

K-P.C.Board TXANP03VJZ5



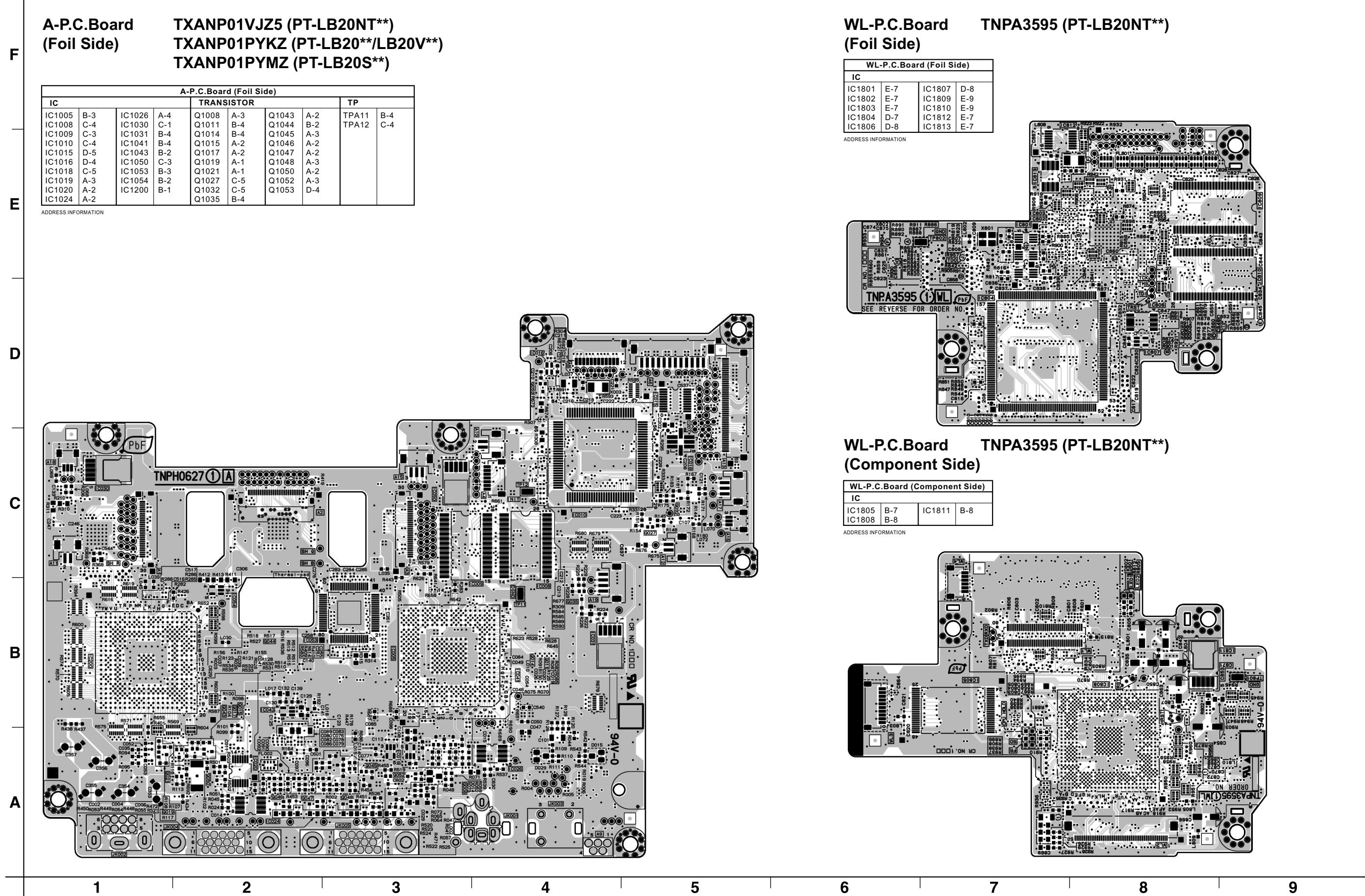
## 12.10. S1-P.C.Board, S2-P.C.Board





## 13 Circuit Boards

### 13.1. A-P.C.Board (Foil Side) / WL-P.C.Board (Foil Side/Component Side)



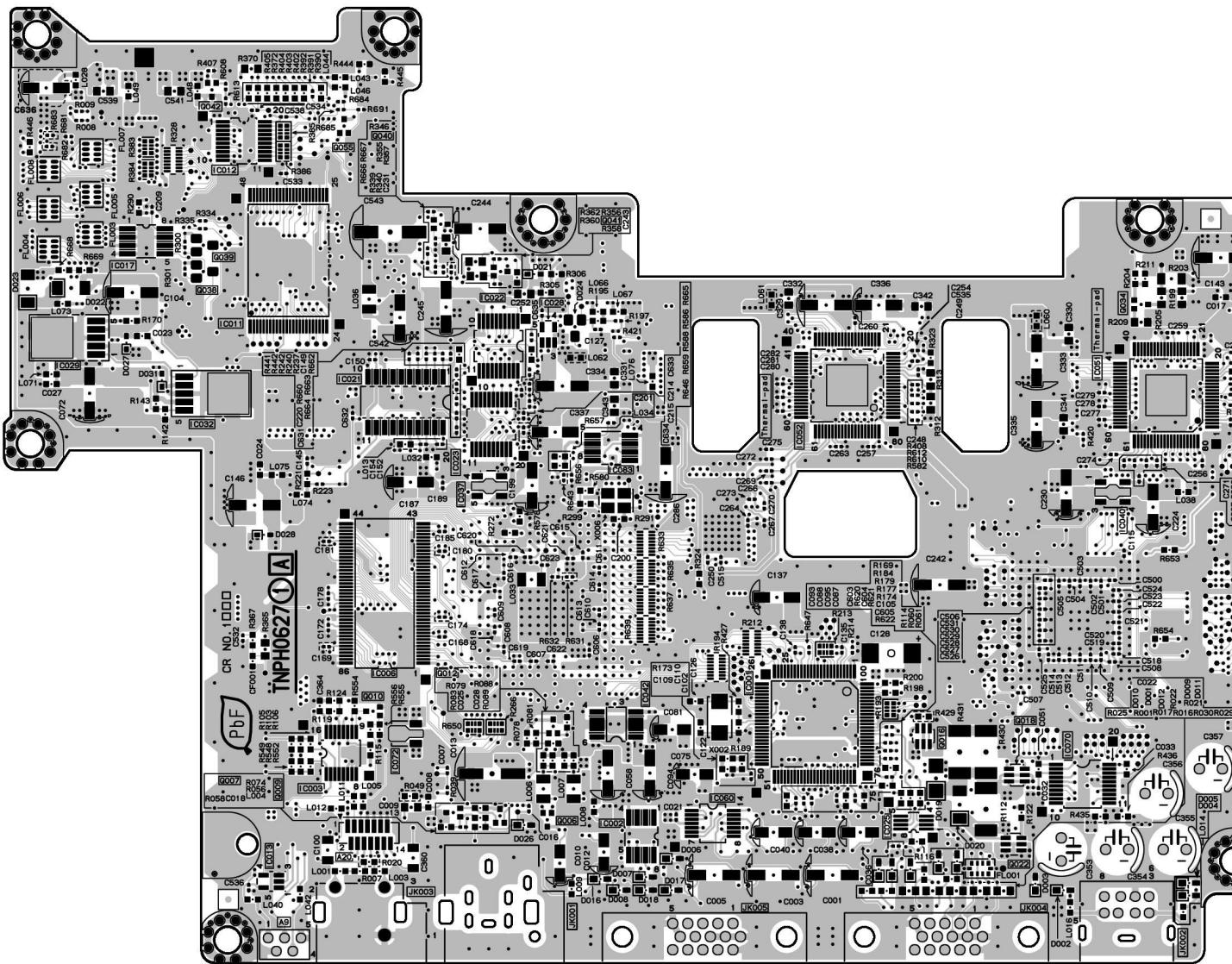
### 13.2. A-P.C.Board (Component) / S1-P.C.Board (Foil Side/Component Side)

**A-P.C.Board  
(Component Side)**

**TXANP01VJZ5 (PT-LB20NT\*\*)  
TXANP01PYKZ (PT-LB20\*\*/LB20V\*\*)  
TXANP01PYMZ (PT-LB20S\*\*)**

A-P.C.Board (Component Side)							
IC	TRANSISTOR						
IC1001	B-4	IC1028	C-3	Q1006	A-3	Q1041	C-3
IC1002	A-3	IC1029	C-1	Q1007	A-2	Q1042	D-1
IC1003	A-2	IC1032	C-1	Q1009	A-2	Q1055	D-2
IC1006	B-2	IC1037	B-2	Q1010	A-2		
IC1011	C-2	IC1040	B-5	Q1012	B-2		
IC1012	D-2	IC1042	B-3	Q1016	A-4		
IC1013	A-2	IC1051	C-5	Q1018	A-5		
IC1017	C-1	IC1052	C-4	Q1022	A-4		
IC1021	C-2	IC1060	A-3	Q1034	C-5		
IC1022	C-3	IC1070	A-5	Q1038	C-1		
IC1023	B-2	IC1072	A-2	Q1039	C-1		
IC1025	A-4	IC1083	C-3	Q1040	D-2		

ADDRESS INFORMATION



F

E

D

C

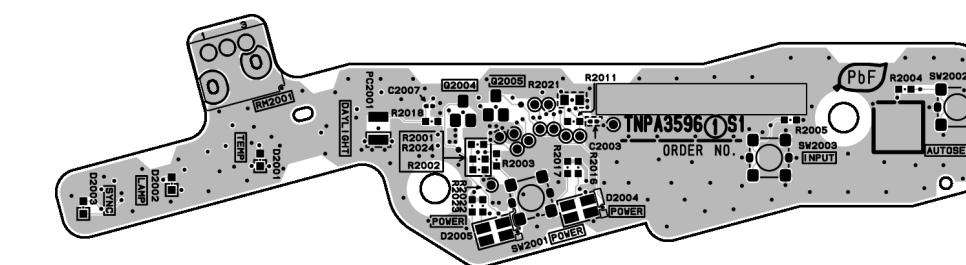
B

A

**S1-P.C.Board  
(Foil Side)**

S1-P.C.Board (Foil Side)	
TRANSISTOR	
Q2004	E-7
Q2005	E-7

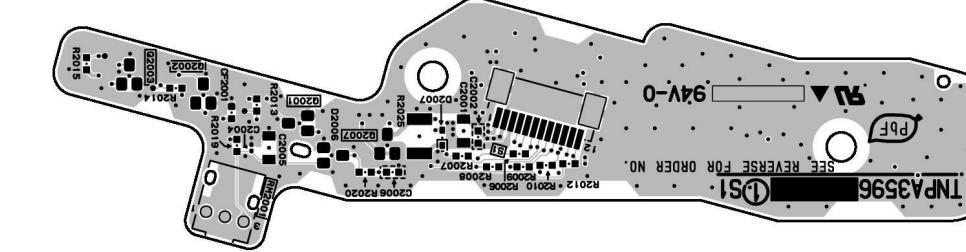
ADDRESS INFORMATION



**S1-P.C.Board  
(Component Side)**

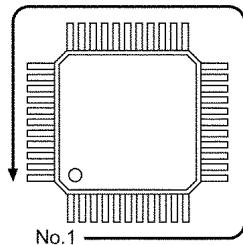
S1-P.C.Board (Component Side)	
TRANSISTOR	
Q2001	B-7
Q2002	B-7
Q2003	B-6
Q2007	B-7

ADDRESS INFORMATION

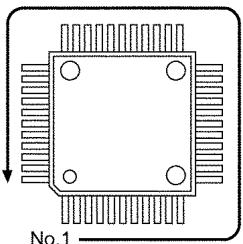


1 2 3 4 5 6 7 8 9

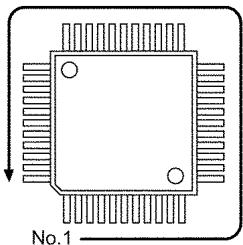
## 14 Terminal guide of ICs and transistors



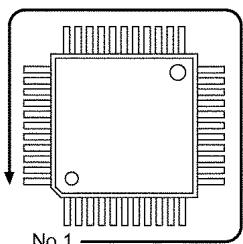
C1AB00002033 80 Pin



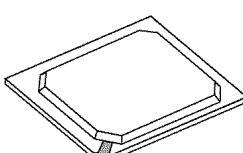
C1DB00001268 208 Pin



C2DBYH000017 112 Pin

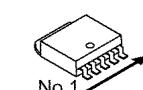


C1AB00002204 100 Pin

TVRN381  
(C3FBBL000142)  
TVRN382  
(C3FBND000172)

48 Pin

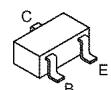
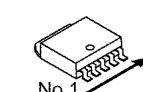
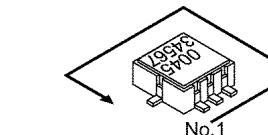
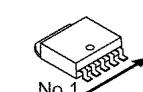
48 Pin

C1AB00002043  
C1AB00001945  
C2GBC0000205C0DBEKG00004  
C0DBEZE00006  
C0CBAAF00035

5 Pin

5 Pin

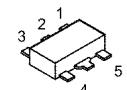
5 Pin

B1ABDF000018  
B1ADCE000013

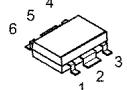
C1GB00000084 8 Pin



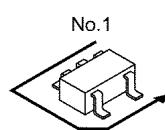
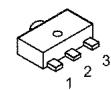
C0CBCAD00015 5 Pin



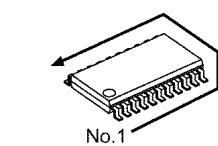
C0DBZFD00018 5 Pin



C0DBZGF00002 6 Pin

C0JBAE000354  
C0CBCAC00096 5 Pin

AN78L05M 3 Pin

C0JBAF000379  
C0ZBZ0001035  
C0ZBZ0001034  
C0JBAZ001876  
C0FBBD000183  
C0JBAZ001633  
C3ABPJ000071  
C0JBAR000370  
C0ABZA000044  
C1CB00001750  
C0FBBK000051  
C3ABQG000083

20 Pin

28 Pin

28 Pin

14 Pin

20 Pin

20 Pin

86 Pin

16 Pin

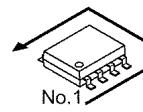
14 Pin

20 Pin

16 Pin

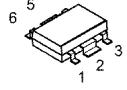
54 Pin

C1GB00000084 8 Pin

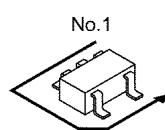
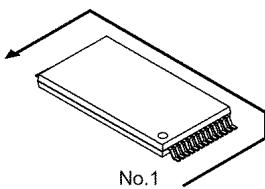
C1BB00000840  
C3EBCC000071  
C3EBJC000055  
C0JBAZ002431  
C0JBAZ002222  
C1BB00000974  
C0JBAB000635  
C0JBAF000540

8 Pin

C0DBZFD00018 5 Pin



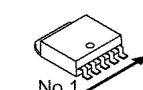
C0DBZGF00002 6 Pin

C0JBAE000354  
C0CBCAC00096 5 PinTVRN381  
(C3FBBL000142)

48 Pin

TVRN382  
(C3FBND000172)

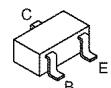
48 Pin

C0DBEKG00004  
C0DBEZE00006  
C0CBAAF00035

5 Pin

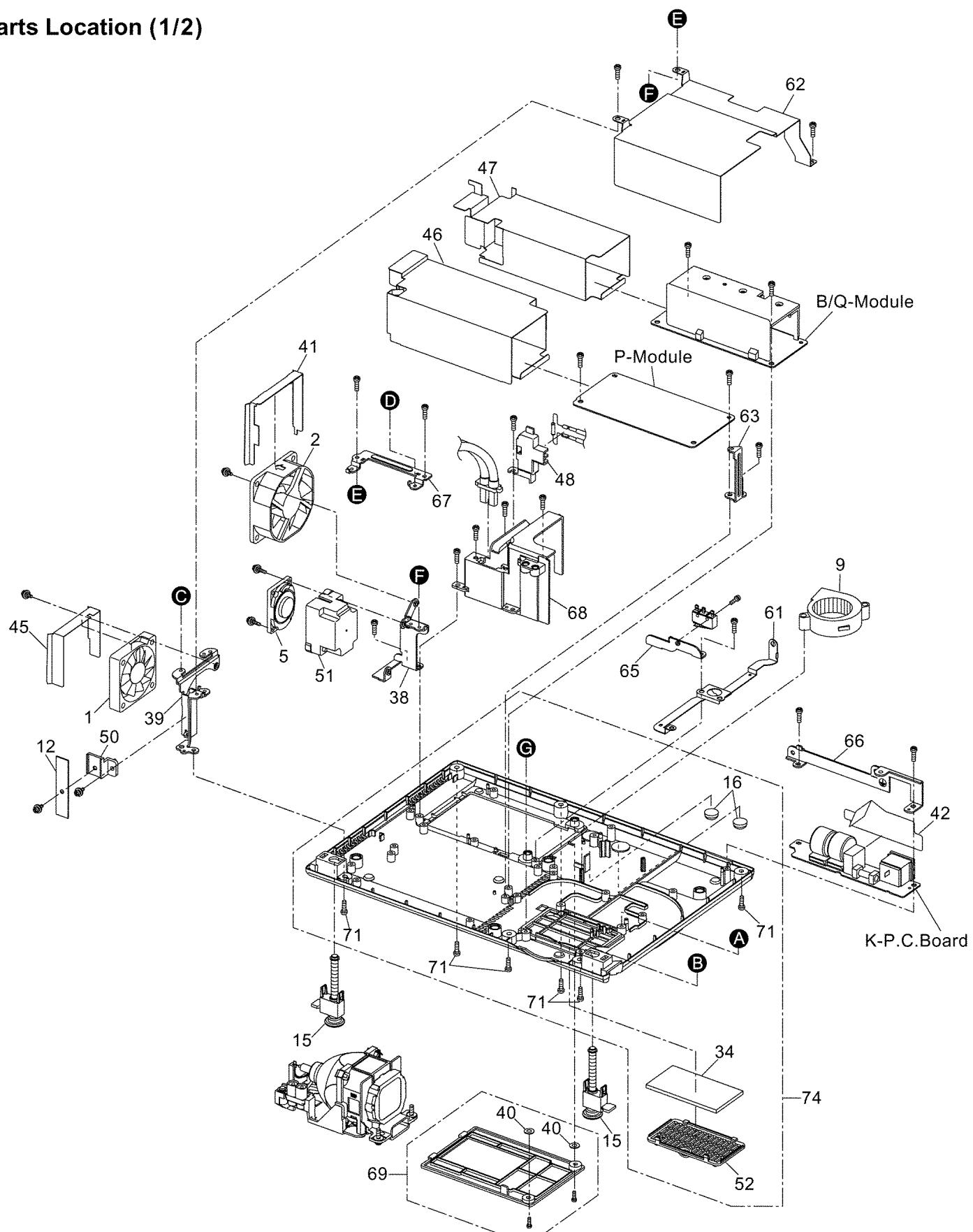
5 Pin

5 Pin

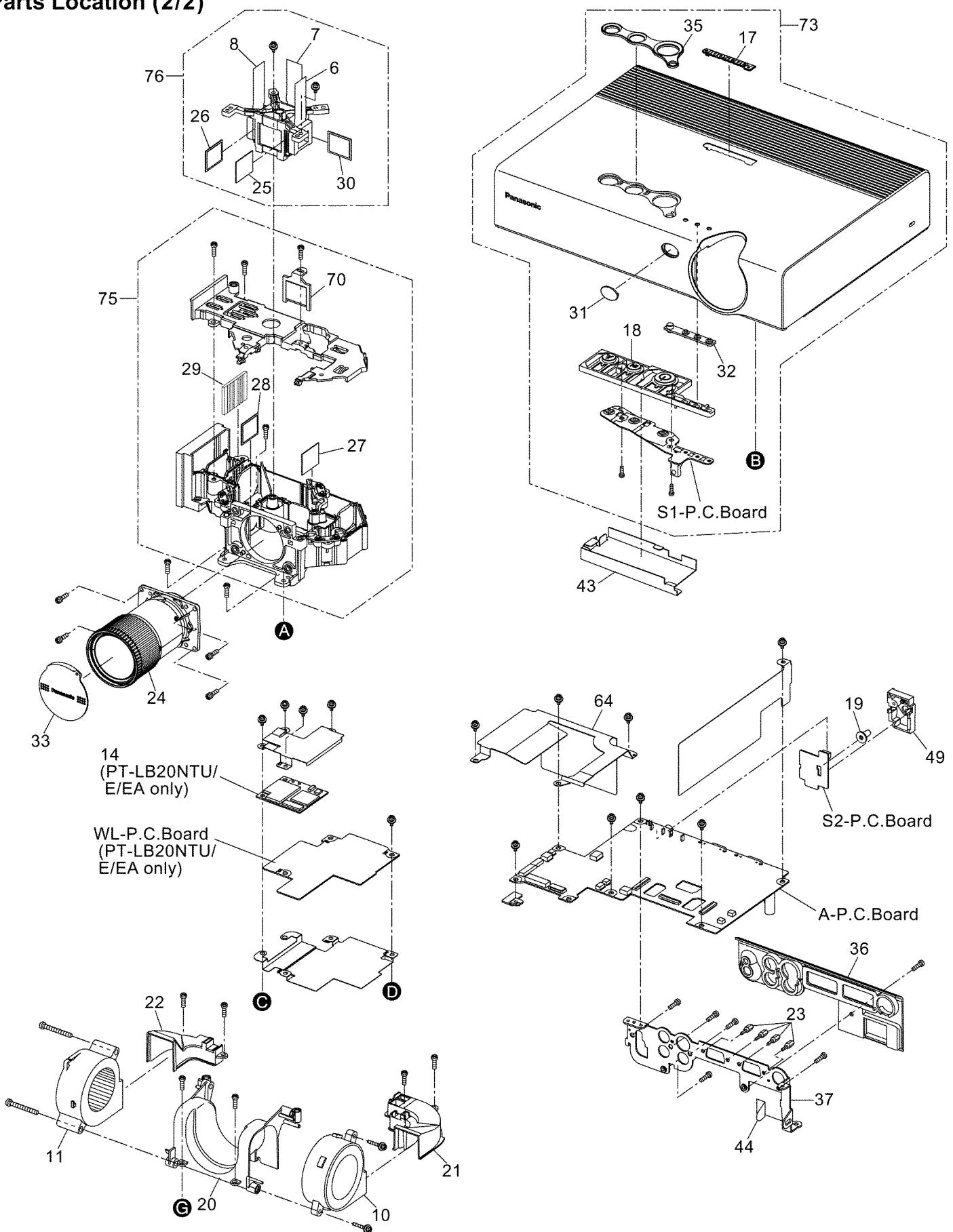
B1ABDF000018  
B1ADCE000013

# 15 Exploded Views

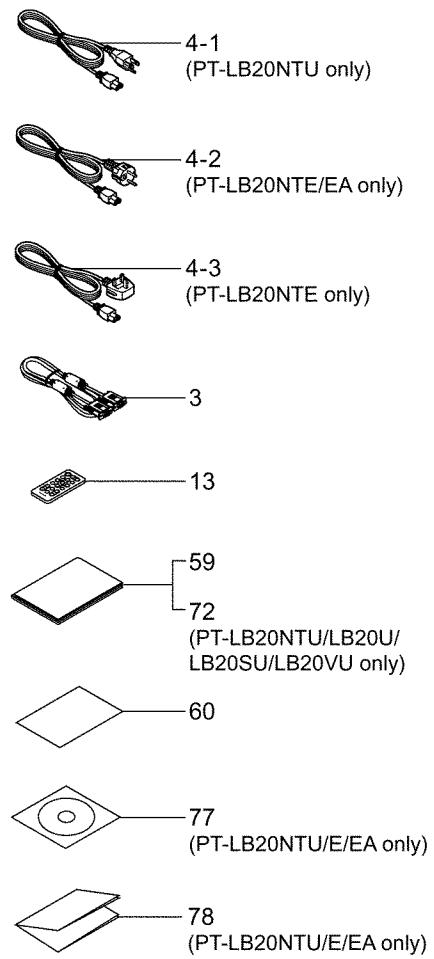
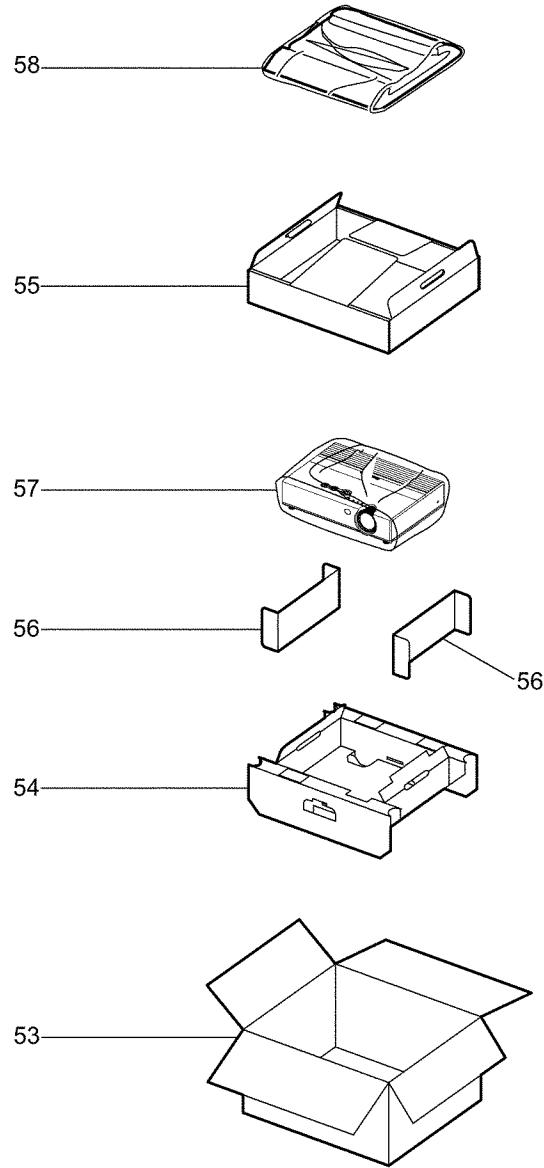
## Parts Location (1/2)



## Parts Location (2/2)



## Packing Parts



# 16 Replacement Parts List

## Important Safety Notice

Components identified by the International symbol  have special characteristics important for safety.  
When replacing any of these components, use only the manufacturer's specified parts.

### Abbreviation of part name and description

#### 1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

TYPE	ALLOWANCE
C : Carbon	F : - 1 %
F : Fuse	G : - 2 %
M : Metal Oxide	J : - 5 %
Metal Film	K : -10%
S : Solid	M : -20%
W : Wire Wound	

#### 2. Capacitor

Example:

ECKF1H103ZF C 0.01PF, Z 50V

TYPE	ALLOWANCE
C : Ceramic	C : -0.25 pF
E : Electrolytic	D : -0.5 pF
P : Polyester	F : - 1 pF
PP : Polypropylene	J : - 5 %
S : Polystyrol	K : -10 %
T : Tantalum	L : -15 %
	M : -20 %
	P : +100 %, -0 %
	Z : +80 %, -20 %

### Notes:

Printed circuit board assembly with mark (RTL) is no longer available after production discontinuation of the complete set.

Ref. No.	Part No.	Part Name & Description	Remarks
[MECHANICAL PARTS]			
1	FB50BK4WB503	POWER FAN	
2	FB60DM4WB504	VENTILATION FAN	
	J0KG00000036	CORE	
3	K1HA15DA0002	VGA CABLE	
4-1	K2CG3DR00006	POWER CORD	 LB20NTU, LB20U, LB20VU, LB20SU
4-2	K2CM3DR00002	POWER CORD (EUROPE)	 LB20NTE/EA, LB20E/EA, LB20VE/EA, LB20SE/EA
4-3	K2CT3DR00005	POWER CORD (U.K.)	 LB20NTEA, LB20EA, LB20VEA, LB20SEA
5	L0AA04C00004	SPEAKER	
6	L5BDAXQ00221	LIQUID CRYSTAL DISPLAY(R)	LB20NT**, LB20**
7	L5BDAXQ00222	LIQUID CRYSTAL DISPLAY(G)	LB20NT**, LB20**
8	L5BDAXQ00223	LIQUID CRYSTAL DISPLAY(B)	LB20NT**, LB20**
6	L5BDAXQ00248	LIQUID CRYSTAL DISPLAY(R)	LB20V**
7	L5BDAXQ00249	LIQUID CRYSTAL DISPLAY(G)	LB20V**
8	L5BDAXQ00250	LIQUID CRYSTAL DISPLAY(B)	LB20V**
6	L5BDAXN00073	LIQUID CRYSTAL DISPLAY(R)	LB20S**
7	L5BDAXN00074	LIQUID CRYSTAL DISPLAY(G)	LB20S**
8	L5BDAXN00075	LIQUID CRYSTAL DISPLAY(B)	LB20S**
9	L6FCHC9H0005	PBS FAN	
10	L6FCKEAH0002	SIROCCO FAN (DUCT ASSY)	
11	L6FCKEBH0003	SIROCCO FAN (DUCT ASSY)	
12	N1JB0LB00001	ANTENNA	 LB20NT**
13	N2QADC000008	REMOTE CONTROLLER	
14	N5HZZ0000033	LAN MODULE	 LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
15	TBLB0046	ADJUST LEG	
16	TBLG3063	RUBBER LEG (REAR)	
17	TBMA150	PANASONIC BADGE	
	TBMA166	WIRELESS LOGO BADGE	LB20NT**
	TBMP819-1	MODEL NAME PLATE	LB20NTU
	TBMP820-1	MODEL NAME PLATE	LB20NTE
	TBMP832-1	MODEL NAME PLATE	LB20NTEA
	TBMP833-1	MODEL NAME PLATE	LB20U
	TBMP834-1	MODEL NAME PLATE	LB20E
	TBMP835-1	MODEL NAME PLATE	LB20EA
	TBMP836-1	MODEL NAME PLATE	LB20SU
	TBMP837-1	MODEL NAME PLATE	LB20SE
	TBMP838-1	MODEL NAME PLATE	LB20SEA
	TBMP840-1	MODEL NAME PLATE	LB20VU
	TBMP841-1	MODEL NAME PLATE	LB20VE
	TBMP842-1	MODEL NAME PLATE	LB20VEA
	TBMP826	MODEL NO. LABEL	LB20NTU
	TBMP827	MODEL NO. LABEL	LB20NTE
	TBMP843	MODEL NO. LABEL	LB20NTEA
	TBMP844	MODEL NO. LABEL	LB20U
	TBMP845	MODEL NO. LABEL	LB20E
	TBMP846	MODEL NO. LABEL	LB20EA
	TBMP847	MODEL NO. LABEL	LB20SU
	TBMP848	MODEL NO. LABEL	LB20SE
	TBMP849	MODEL NO. LABEL	LB20SEA
	TBMP850	MODEL NO. LABEL	LB20VU
	TBMP851	MODEL NO. LABEL	LB20VE
	TBMP852	MODEL NO. LABEL	LB20VEA
18	TBXA38202	CONTROL BUTTON	
19	TBXA38301-1	CURSOR BUTTON	
20	TEEC5112-2	DUCT 1 (DUCT ASSY)	
21	TEEC5148	DUCT 2	
22	TEEC5149	DUCT 3	
23	THEC035N	SCREW	
24	TKGF0092-2	LENS	LB20NT**, LB20**, LB20V**
	TKGF0118	LENS	LB20S**
25	TKGP5226	POLARIZING PLATE/OUT (R)	LB20NT**, LB20**, LB20S**
	TKGP5258	POLARIZING PLATE/OUT (R)	LB20V**

Ref. No.	Part No.	Part Name & Description	Remarks
26	TKGP5228-1	POLARIZING PLATE/OUT (B)	LB20NT**, LB20**, LB20S**
	TKGP5260	POLARIZING PLATE/OUT (B)	LB20V**
27	TKGP5229	POLARIZING PLATE/IN (R)	
28	TKGP5231-1	POLARIZING PLATE/IN (B)	
29	TKGP5240	PBS	
30	TKGP0027	POLARIZING PLATE/OUT (G)	LB20NT**, LB20**
	TKGP5259	POLARIZING PLATE/OUT (G)	LB20S**
	TKGP5263	POLARIZING PLATE/OUT (G)	LB20V**
31	TKKC5142	REMOTE RECEIVER PLATE	FRONT
32	TKKC5167	LED PLATE	
33	TKKL5297-1	LENS COVER	
	TKKX5102	STRAP	
34	TKNE051	FILTER	
35	TKPA75202-1	BUTTON DECORATION BOARD	LB20NT**, LB20**, LB20S**
	TKPA75201-1	BUTTON DECORATION BOARD	LB20V**
	TKPA86901	TERMINAL COVER	
37	TKZF5034	TERMINAL METAL	
	TKZF5038	TERMINAL METAL	LB20NT**
38	TKZJ5053	VENTILATION FAN METAL	
39	TKZJ5060	POWER FAN METAL	
	TMKG389	FAN SPONGE	
	TMKG422	SPACER	
40	TMKX100	WASHER	
	TMKX511-1	INSULATION SHEET (DUCT)	
41	TMKX663-3	VENTILATION FAN COVER	
42	TMKX664	INSULATION SHEET (K-PCB)	
43	TMKX665-1	GUIDE PLATE	
44	TMKX703-2	SHEET	
	TMKX745	TAPE 1 (UPPER COVER)	
	TMKX746	TAPE 2 (UPPER COVER)	
45	TMKX842	POWER FAN COVER	
46	TMKX853	POWER INSULATION SHEET	
47	TMKX854	INSULATION SHEET (BALLAST)	
	TMME154	FUSE COVER	
48	TMXC020	TEMP FUSE METAL	
49	TMXE034-2	HOLDER (S-PCB)	
50	TMXE042	ANTENNA INSTALL METAL	LB20NT**
51	TMZK5021	SPEAKER BOX	
52	TMZX5034	FILTER COVER	
53	TPCB78202	CARTON	LB20NTU
	TPCB78203	CARTON	LB20NTE
	TPCB78204	CARTON	LB20NTEA
	TPCB78205	CARTON	LB20U
	TPCB78206	CARTON	LB20E
	TPCB78207	CARTON	LB20EA
	TPCB78208	CARTON	LB20SU
	TPCB78209	CARTON	LB20SE
	TPCB78210	CARTON	LB20SEA
	TPCB78212	CARTON	LB20VU
	TPCB78213	CARTON	LB20VE
	TPCB78214	CARTON	LB20VEA
54	TPDF1041	CUSHION 1	
55	TPDF1042	ACCESSORY CARTON	
56	TPDF1066	CUSHION 2	
57	TPEH124-1	SET COVER	
58	TPEP013-1	CARRING CASE	
	TQ8817002-1	SAFETY SHEET	LB20NTU, LB20U, LB20VU, LB20SU
60	TQBH7017	SHEET (PASSWORD)	
	TQBH7024	SUPPORT CENTER SHEET	LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
59	TQBJ0166	INSTRUCTION BOOK	△ LB20NTU, LB20U, LB20VU, LB20SU
	TQBJ0168	INSTRUCTION BOOK	△ LB20NTE, LB20E, LB20VE, LB20SE
	TQBJ0167	INSTRUCTION BOOK	△ LB20NTEA, LB20EA, LB20VEA, LB20SEA
	TQBJ7008	HIGH GROUND SHEET	LB20NTU, LB20U, LB20VU, LB20SU
	TQDJ1712010	SHEET	
	TQDJ18004	GUARANTEE CARD (CANADA)	LB20NTU, LB20U, LB20VU, LB20SU
	TQDJ18015-8	GUARANTEE CARD (USA)	LB20NTU, LB20U, LB20VU, LB20SU
78	TQDJ19016	SIMPLE SHEET	LB20NTU
	TQDJ19013	SIMPLE SHEET	LB20NTEA, LB20NTE
	TQDJ19014	SIMPLE SHEET	LB20NTE
	TQDJ19015	SIMPLE SHEET	LB20NTE
	TQF86202	LABEL	
	TSXL458	FLEX CABLE	△
	TSXL459	FLEX CABLE (WL)	△ LB20NT**
	TUCB5023	ALUMINUM SHEET 2 (A-PCB)	
	TUCB5026	ALUMINUM SHEET B (A-PCB)	
	TUCB5027	ALUMINUM SHEET A	UPPER COVER
	TUCB5029	ALUMINUM SHEET B (LAMP)	
	TUCB5036	ALUMINUM SHEET 4	BOTTOM COVER
	TUCC6059	SHIELD METAL (WL)	LB20NT**
	TUCC6060	SHIELD METAL (LAN MODULE)	LB20NT**
61	TUCX5161	EARTH METAL 1	
62	TUCX5162-1	EARTH METAL 2	
63	TUCX5163	EARTH METAL (A-PCB)	
64	TUCX5165	EARTH METAL 3	
	TUCX5203	EARTH METAL 2 (A-PCB)	LB20NT**
65	TUWC051	INTERLOCK METAL	
66	TUWC052	METAL	
67	TUXE254	WL-PCB METAL 1	LB20NT**
	TXAJE01VJJ8C	LEAD WIRE (K-PCB)	
68	TXFEE01VJW5	LAMP HOUSE	
69	TXFKL01VJW5	LAMP COVER ASSY	
77	TXFQH01VJZ5	CD-ROM	△ LB20NT**
	TXJ/B1VJW5A	LEAD WIRE (BALLAST UNIT)	△
	TXJ/L2VJW5	LAMP CABLE	
	TXJ/P1VJW5A	LEAD WIRE (K-PCB)	△ WITH TEMP FUSE
	TXJ/P3VJW5A	LEAD WIRE	△
	TXJ/Q3VJZ5	LEAD WIRE (BALLAST UNIT)	△
70	TXZKG02VJZ5	POLARIZING PLATE/IN (G)	
	XSB3+8FN	SCREW	
71	XTBT969FJK	SCREW	
	XTN3+6GFJ	SCREW	
	XTV3+10GFJ	SCREW	
	XTV3+12GFJ	SCREW	
	XTW3+8PFJ	SCREW	
	XYN2+F6FJ	SCREW	
	XYN2+J10FJ	SCREW	
	XYN3+F14FJ	SCREW	
	XYN3+F30FJK	SCREW	
	XYN3+F8FJ	SCREW	
	XYN3+J6FJ	SCREW	
	XYN3+J8FJ	SCREW	
	XYN4+E8FJ	SCREW	
72	XZBT6532	POLY BAG	LB20NTU, LB20U, LB20VU, LB20SU

Ref. No.	Part No.	Part Name & Description	Remarks
73	TXFKF99PYHZ	UPPER COVER	LB20NT**
	TXFKF99PYKZ	UPPER COVER	LB20**, LB20S**
	TXFKF99PYPZ	UPPER COVER	LB20V**
74	TXFKF98PYHZ	BOTTOM COVER	LB20NTU
	TXFKF99PZPZ	BOTTOM COVER	LB20NTE
	TXFKF99PYJZ	BOTTOM COVER	LB20NTEA
	TXFKF98PYKZ	BOTTOM COVER	LB20U
	TXFKF99PZQZ	BOTTOM COVER	LB20E
	TXFKF99PYLZ	BOTTOM COVER	LB20EA
	TXFKF98PYPZ	BOTTOM COVER	LB20VU
	TXFKF99PZSZ	BOTTOM COVER	LB20VE
	TXFKF99PYQZ	BOTTOM COVER	LB20VEA
	TXFKF99PYMZ	BOTTOM COVER	LB20SU
75	TXFKF99PZRZ	BOTTOM COVER	LB20SE
	TXFKF99PYNZ	BOTTOM COVER	LB20SEA
76	TXFEC98VJZ5	ANALYSIS BLOCK	LB20NT**, LB20**, LB20S**
	TXFEC98VJZ8	ANALYSIS BLOCK	LB20V**
	TXFEC99VJZ5	OPTICAL BLOCK	LB20NT**, LB20**
	TXFEC99VJZ8	OPTICAL BLOCK	LB20V**
	TXFEC99PYMZ	OPTICAL BLOCK	LB20S**
		[INTEGRATED CIRCUIT]	
IC1001	C1AB00002204	I.C	
IC1002	C3EBCC000072	I.C	
IC1003	C0JBAR000370	I.C	LB20NT**, LB20**, LB20V**
IC1005	C1AB00002041	I.C	
IC1006	C3ABPJ000071	I.C	
IC1008	C0ZBZ0001035	I.C	
IC1009	C0ZBZ0001034	I.C	
IC1010	C2DBYH000017	I.C	
IC1011	TVRN381	I.C	
IC1012	C0JBAF000379	I.C	
IC1013	C0JBAE000354	I.C	
IC1015	C0JBAF000379	I.C	
IC1016	C0EBE0000543	I.C	
IC1017	C3EBJC000055	I.C	
IC1018	C1GB00000102	I.C	
IC1019	C0CBCAC00096	I.C	
IC1020	C0JBAZ001876	I.C	
IC1021	C0FBBD000183	I.C	
IC1022	C0JBAZ001633	I.C	
IC1023	C0JBAZ001633	I.C	
IC1024	C3EBCC000072	I.C	
IC1025	C0JBAZ002222	I.C	
IC1026	C1BB00000840	I.C	
IC1028	C0JBAE000354	I.C	
IC1029	C0DBEKG00004	I.C	
IC1030	C0DBEZFO0004	I.C	
IC1031	C0DBEKG00004	I.C	
IC1032	C0DBEKG00004	I.C	
IC1037	C0DBZFD00018	I.C	
IC1040	C0DBZFD00018	I.C	
IC1041	C0CBCDD00004	I.C	
IC1042	C0DBZGF00002	I.C	
IC1043	C0CBCAD00015	I.C	
IC1050	C0DBEKG00004	I.C	
IC1051	C1AB00002033	I.C	
IC1052	C1AB00002033	I.C	
IC1053	C1AB00002033	I.C	
IC1054	C0DBEMC00020	I.C	
IC1060	COABZA000044	I.C	
IC1070	C1CB00001750	I.C	
IC1072	C0CBADC00075	I.C	
IC1083	C0JBAZ002431	I.C	
IC1200	C1AB00001945	I.C	
IC1801	C0JBAB000635	I.C	LB20NT**
IC1802	C0JBAF000540	I.C	LB20NT**
IC1804	C1DB00001268	I.C	LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
IC1805	TVRN382	I.C	LB20NT**
IC1807	C0CBCAD00015	I.C	LB20NT**
IC1808	C2GBC0000205	I.C	LB20NT**
IC1809	C3ABQG000083	I.C	LB20NT**
IC1810	C3ABQG000083	I.C	LB20NT**
IC1811	C0CBAAF00035	I.C	LB20NT**
IC1812	C0FBBK000051	I.C	LB20NT**
IC1813	C1BB00000999	I.C	LB20NT**
IC9602	C0ZBZ0000943	I.C	
IC9603	C0ZBZ0000943	I.C	
		[TRANSISTORS]	
Q1006	B1ABDF000018	TRANSISTOR	
Q1007	B1ADCE000013	TRANSISTOR	
Q1008	B1ABDF000018	TRANSISTOR	
Q1009	B1ABDF000018	TRANSISTOR	
Q1010	B1ABDF000018	TRANSISTOR	LB20NT**, LB20**, LB20V**
Q1012	B1ABDF000018	TRANSISTOR	
Q1015	B1ABDF000018	TRANSISTOR	
Q1016	B1DHDD000027	TRANSISTOR	
Q1017	B1ABDF000018	TRANSISTOR	
Q1018	B1DFED000017	TRANSISTOR	
Q1019	B1ABDF000018	TRANSISTOR	
Q1021	B1ABDF000018	TRANSISTOR	
Q1022	B1DHDD000027	TRANSISTOR	
Q1027	B1ABDF000018	TRANSISTOR	
Q1032	B1ABDF000018	TRANSISTOR	
Q1034	B1ABDF000018	TRANSISTOR	
Q1035	B1ABDF000018	TRANSISTOR	
Q1038	B1CBHD000001	TRANSISTOR	
Q1039	B1CBHD000001	TRANSISTOR	
Q1040	B1ABDF000018	TRANSISTOR	
Q1041	B1ABDF000018	TRANSISTOR	
Q1042	B1ABDF000018	TRANSISTOR	
Q1044	B1ABDF000018	TRANSISTOR	
Q1045	B1ADCE000013	TRANSISTOR	
Q1046	B1ABDF000018	TRANSISTOR	
Q1047	B1ABDF000018	TRANSISTOR	
Q1048	B1ABDF000018	TRANSISTOR	
Q1050	B1ABDF000018	TRANSISTOR	
Q1052	B1ADCE000013	TRANSISTOR	
Q1053	B1ABDF000018	TRANSISTOR	
Q1055	B1ABDF000018	TRANSISTOR	
Q2001	B1ABCF000138	TRANSISTOR	
Q2002	B1ABCF000138	TRANSISTOR	
Q2003	B1ABCF000138	TRANSISTOR	
Q2004	B1ABCF000138	TRANSISTOR	
Q2005	B1ABCF000138	TRANSISTOR	
Q2007	MA721	DIODE	
Q9603	B1DEGQ000037	TRANSISTOR	
Q9604	2SB710ATX	TRANSISTOR	
Q9605	2SB710ATX	TRANSISTOR	
Q9606	B1DEGM000022	TRANSISTOR	
Q9607	B1DEGM000022	TRANSISTOR	
Q9608	2SB710ATX	TRANSISTOR	
Q9609	2SB710ATX	TRANSISTOR	
Q9610	B1DEGM000022	TRANSISTOR	
Q9611	B1DEGM000022	TRANSISTOR	
Q9614	B1DEGQ000037	TRANSISTOR	
		[DIODES]	
D1001	MAZ80560ML	DIODE	
D1002	MAZ81500ML	DIODE	
D1003	MAZ81500ML	DIODE	
D1004	MAZ81500ML	DIODE	
D1005	MAZ81500ML	DIODE	
D1006	MAZ80560ML	DIODE	
D1007	MAZ80560ML	DIODE	
D1008	MAZ80560ML	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D1009	MAZ80560ML	DIODE	
D1010	MAZ80560ML	DIODE	
D1011	MAZ80560ML	DIODE	
D1012	MAZ80560ML	DIODE	
D1016	MAZ80560ML	DIODE	
D1017	MAZ80560ML	DIODE	
D1018	MAZ80560ML	DIODE	
D1019	MAZY12000L	DIODE	
D1020	B0HCMM000013	DIODE	
D1021	MA2S11100L	DIODE	
D1022	B0JCPD000026	DIODE	
D1023	B0JCPD000026	DIODE	
D1024	MA3X152E0L	DIODE	
D1026	MAZ80560ML	DIODE	
D1027	MA2S11100L	DIODE	
D1028	MA2S11100L	DIODE	
D1031	MA2S11100L	DIODE	
D2001	B3AAB0000168	DIODE	
D2002	B3AAB0000168	DIODE	
D2003	B3ABB0000181	DIODE	
D2004	B3AGB0000033	DIODE	
D2005	B3AGB0000033	DIODE	
D2006	MA3X157A0L	DIODE	
D2007	MA2S11100L	DIODE	
D9101	ERZV10D751	VARISTOR	▲
D9601	B0HASR000006	DIODE	
D9604	MA158TX	DIODE	
D9605	MA2Z72000L	DIODE	
D9606	MA158TX	DIODE	
D9607	MA2Z72000L	DIODE	
D9608	MA158TX	DIODE	
D9609	MA2Z72000L	DIODE	
D9611	MA158TX	DIODE	
D9612	MA2Z72000L	DIODE	
D9616	D1FL40F4063	DIODE	B0ECHP000001
D9617	MA2Z72000L	DIODE	
D9618	MA2Z72000L	DIODE	
D9619	MA2Z72000L	DIODE	
D9620	MA2Z72000L	DIODE	
D9621	MA2Z72000L	DIODE	
D9622	D1FL40F4063	DIODE	B0ECHP000001
D9623	D1FL40F4063	DIODE	B0ECHP000001
D9624	MA2Z72000L	DIODE	
D9625	MA2Z72000L	DIODE	
D9626	MA2Z72000L	DIODE	
D9627	MA2Z72000L	DIODE	
D9628	MA2Z72000L	DIODE	
D9629	D1FL40F4063	DIODE	B0ECHP000001

## [COILS]

L1001	J0JCC0000168	FILTER	
L1002	J0JCC0000168	FILTER	
L1003	J0JCC0000168	FILTER	
L1004	J0JCC0000168	FILTER	
L1005	J0JCC0000168	FILTER	
L1008	J0JCC0000168	FILTER	LB20NT**, LB20**, LB20V**
L1009	J0JCC0000168	FILTER	
L1010	J0JJC0000022	EMI FILTER	
L1011	J0JCC0000168	FILTER	
L1012	J0JJC0000168	FILTER	
L1013	J0JJC0000022	EMI FILTER	
L1014	J0JCC0000168	FILTER	
L1015	J0JJC0000022	EMI FILTER	
L1016	J0JCC0000168	FILTER	
L1017	J0JJC0000022	EMI FILTER	
L1018	J0JJC0000022	EMI FILTER	
L1028	J0JJC0000022	EMI FILTER	
L1030	J0JJC0000022	EMI FILTER	
L1032	J0JJC0000022	EMI FILTER	
L1033	ELJFA470JF	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L1034	J0JJ0C0000022	EMI FILTER	
L1035	J0JJ0C0000022	EMI FILTER	
L1036	ELJFA6R8JF	COIL	
L1037	ELJFA470JF	COIL	
L1038	J0JJ0C0000022	EMI FILTER	
L1039	J0JJ0C0000022	EMI FILTER	
L1040	J0JJ0C0000022	EMI FILTER	
L1042	J0JJ0C0000022	EMI FILTER	
L1043	J0JJ0C0000022	EMI FILTER	
L1044	J0JJ0C0000022	EMI FILTER	
L1045	J0JJ0C0000022	EMI FILTER	
L1046	J0JJ0C0000022	EMI FILTER	
L1048	J0JJ0C0000022	EMI FILTER	
L1049	J0JJ0C0000022	EMI FILTER	
L1066	J0JCC00000168	FILTER	
L1067	J0JCC00000168	FILTER	
L1068	J0JCC00000168	FILTER	
L1069	J0JCC00000168	FILTER	
L1070	J0JCC00000168	FILTER	
L1071	J0JCC00000168	FILTER	
L1072	J0JCC00000168	FILTER	
L1073	J0JCC00000168	FILTER	
L1074	J0JCC00000168	FILTER	
L1075	J0JCC00000168	FILTER	
L1076	J0JJ0C0000022	EMI FILTER	
L1801	J0JJ0C0000022	EMI FILTER	LB20NT**
L1802	J0JJ0C0000022	EMI FILTER	LB20NT**
L1803	J0JJ0C0000022	EMI FILTER	LB20NT**
L1804	J0JJ0C0000022	EMI FILTER	LB20NT**
L1805	J0JJ0C0000022	EMI FILTER	LB20NT**
L1807	J0JJ0C0000022	EMI FILTER	LB20NT**
L1808	J0JJ0C0000022	EMI FILTER	LB20NT**
L1809	J0JJ0C0000022	EMI FILTER	LB20NT**
L1810	J0JJ0C0000022	EMI FILTER	LB20NT**
LF9101	G0B592H00001	FILTER	▲
LF9102	G0B592H00001	FILTER	▲
FL1001	J0HABB0000014	FILTER	
FL1002	J0HABB0000014	FILTER	
FL1003	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1004	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1005	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1006	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1007	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1008	EXB38V101J	RESISTOR ARRAY	LB20NT**
FL1801	J0JBD0000007	COIL	LB20NT**
FL1802	J0JBD0000007	COIL	LB20NT**
FL1803	J0JBD0000007	COIL	LB20NT**
FL1804	J0JBD0000007	COIL	LB20NT**
FL1805	J0JBD0000007	COIL	LB20NT**
FL1806	J0JBD0000007	COIL	LB20NT**
FL1807	J0JBD0000007	COIL	LB20NT**
[RESISTORS]			
R1001	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R1002	ERJ3GEYJ222V	M 2.2KOHM, J, 1/16W	
R1004	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1005	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1006	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20S**
R1007	ERJ3GEY0R00V	M 0 OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	LB20S**
R1008	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1009	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1016	ERJ6GEYJ472V	M 4.7KOHM, J, 1/10W	
R1017	ERJ6GEYJ472V	M 4.7KOHM, J, 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1019	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1020	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	LB20S**
R1021	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1022	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1024	ERJ3GEYJ472V	M 4.7KOHM, J, 1/16W	
R1025	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R1027	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1029	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1030	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1039	ERJ2GEJ100X	M 10 OHM, 0.063W	
R1041	ERJ6GEYJ750V	M 75 OHM, J, 1/10W	
R1044	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1045	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R1047	ERJ3GEYJ472V	M 4.7KOHM, J, 1/16W	
R1048	ERJ3GEYJ562V	M 5.6KOHM, J, 1/16W	
R1049	ERJ3GEYJ183V	M 18KOHM, J, 1/16W	LB20S**
R1051	ERJ3GEYJ473V	M 47KOHM, J, 1/16W	
R1052	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1053	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1054	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1055	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1056	ERJ3GEYJ102V	M 1K OHM, J, 1/16W	
R1057	ERJ6GEYJ750V	M 75 OHM, J, 1/10W	
R1058	ERJ3GEYJ104V	M 100KOHM, J, 1/16W	
R1059	ERJ3GEYJ471V	M 470 OHM, J, 1/16W	
R1060	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	
R1061	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	
R1064	ERJ3GEYJ472V	M 4.7KOHM, J, 1/16W	
R1065	ERJ3GEYJ562V	M 5.6KOHM, J, 1/16W	
R1071	ERJ6GEYJ750V	M 75 OHM, J, 1/10W	
R1072	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1073	ERJ3GEYJ471V	M 470 OHM, J, 1/16W	
R1074	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1078	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1079	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1081	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1082	ERJ3GEYJ682V	M 6.8KOHM, J, 1/16W	
R1085	ERJ3GEYJ332V	M 3.3KOHM, J, 1/16W	
R1088	ERJ3GEYJ471V	M 470 OHM, J, 1/16W	
R1094	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1095	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1098	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1099	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	
R1100	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	
R1101	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1102	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1103	ERJ3GEYJ563	M 56KOHM, J, 1/16W	LB20NT**, LB20**, LB20V** (D0GB124JA002)
R1104	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1105	ERJ3GEYJ154V	M 150KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1106	ERJ3GEYJ333V	M 33K OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1107	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1108	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	
R1109	ERJ3GEYJ124V	M 120KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1110	ERJ3GEYJ154V	M 150KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1111	ERJ3GEYJ102V	M 1K OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1112	ERJ1TYJ221U	M 220 OHM, 1W	
R1113	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	
R1114	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1115	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1116	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1117	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	
R1118	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	
R1119	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1120	ERJ3GEYJ223V	M 22KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1121	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1122	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R1123	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1124	ERJ3GEYJ183V	M 18KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1125	ERJ3GEY0R00V	M 0 OHM, J, 1/16W	
R1126	ERJ3GEYJ124V	M 120KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1127	ERJ3GEYJ154V	M 150KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1128	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1129	ERJ3GEYJ102V	M 1K OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1130	ERJ3GEY0R00V	M 0 OHM, J, 1/16W	
R1142	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1143	ERJ3EKF3902V	M 39K OHM, 1/16W	
R1144	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1145	ERJ3EKF3900V	M 390OHM, 1/16W	
R1147	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1148	ERJ3EKF3301	M 3.3KOHM, 1/16W	
R1151	ERJ3EKF3901	M 3.9KOHM, 1/16W	
R1154	ERJ3EKF1002V	M 10K OHM, 1/16W	
R1155	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1156	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1164	ERJ3EKF1371	M1.37KOHM, 1/16W	
R1167	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1168	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1169	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1170	ERJ3EKF3902V	M 39K OHM, 1/16W	
R1171	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1172	ERJ3EKF3900V	M 390 OHM, 1/16W	
R1173	ERJ3EKF1741	M1.74KOHM, 1/16W	
R1174	ERJ2GE0R00X	M 0 OHM, 0.063W	
R1175	ERJ3EKF3301	M 3.3KOHM, 1/16W	
R1177	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1178	ERJ2GEJ560	M 560 OHM, 0.063W	
R1179	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1180	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1181	ERJ3EKF3901	M 3.9KOHM, 1/16W	
R1183	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1184	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1189	ERJ3GEYJ105V	M 1M OHM, J, 1/16W	
R1192	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	
R1193	EXB28V560J	RESISTOR ARRAY	
R1194	D1HG5608A002	RESISTOR	
R1195	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1197	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1198	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	
R1199	ERJ6ENF2001V	M 2KOHM, 1/10W	
R1200	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	
R1203	ERJ8ENF1001V	M 1.0KOHM, 1/8W	
R1204	ERJ3EKF8201	M 8.2KOHM, 1/16W	
R1205	ERJ6ENF39R0	M 39 OHM, 1/10W	
R1206	ERJ3GEYJ560V	M 56 OHM, J, 1/16W	
R1209	ERJ6ENF1800V	M 180 OHM, 1/10W	
R1210	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1211	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1212	D1HG5608A002	RESISTOR	
R1213	EXB28V560J	RESISTOR ARRAY	
R1214	ERJ2GEJ220X	M 22 OHM, 0.063W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1221	ERJ3GEYJ560V	M 56 OHM, J,1/16W	
R1222	ERJ6ENF1002	M 10KOHM, 1/10W	
R1223	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1224	ERJ3EKF3302V	M 33K OHM, 1/16W	
R1225	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1226	ERJ3EKF3900V	M 390 OHM, 1/16W	
R1228	ERJ3EKF2701V	M 2.7KOHM, 1/16W	
R1229	ERJ3EKF3901	M 3.9KOHM, 1/16W	
R1237	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1240	ERJ2GEJ472X	M 4.7K OHM, 0.063W	
R1242	ERJ2GEJ472X	M 4.7K OHM, 0.063W	
R1266	EXB28V560J	RESISTOR ARRAY	
R1272	ERJ3GEYJ681V	M 680 OHM, J,1/16W	
R1284	ERJ2GE0R00X	M 0 OHM, 0.063W	
R1286	ERJ2GEJ750	M 75 OHM, 0.063W	
R1290	ERJ3GEYJ301V	M 300 OHM, J,1/16W	
R1291	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1295	ERJ6ENF8201	M 8.2KOHM, 1/10W	
R1299	ERJ3GEYJ560V	M 56 OHM, J,1/16W	
R1300	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1301	ERJ2GEJ472X	M 4.7K OHM, 0.063W	
R1304	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1305	ERJ3EKF1473	M 147KOHM, 1/16W	
R1306	ERJ3EKF1002V	M 10KOHM, 1/16W	
R1308	ERJ6ENF1004	M 1MOHM, 1/10W	
R1309	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1310	ERJ6ENF3302V	M 33KOHM, 1/10W	
R1311	ERJ6ENF6802	M 68KOHM, 1/10W	
R1312	ERJ6ENF3302V	M 33KOHM, 1/10W	
R1313	ERJ6ENF6802	M 68KOHM, 1/10W	
R1314	ERJ6ENF3302V	M 33KOHM, 1/10W	
R1315	ERJ6ENF6802	M 68KOHM, 1/10W	
R1322	ERJ3GEYJ220V	M 22 OHM, J,1/16W	
R1323	ERJ3GEYJ220V	M 22 OHM, J,1/16W	
R1324	ERJ3GEYJ220V	M 22 OHM, J,1/16W	
R1328	D1HG1038A002	RESISTOR	
R1331	ERJ2GEJ105X	M 1M OHM, 0.063W	
R1333	EXB28V103JX	RESISTOR ARRAY	
R1334	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1335	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1339	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1340	ERJ2GEJ101X	M 100 OHM, 0.063W	
R1346	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1355	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1356	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1357	ERJ6GEYJ100V	M 10 OHM, J,1/10W	
R1358	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1360	ERJ6GEYJ100V	M 10 OHM, J,1/10W	
R1362	ERJ6GEYJ560V	M 56 OHM, J,1/10W	
R1365	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1367	ERJ3GEYJ102V	M 1K OHM, J,1/16W	
R1368	ERJ6ENF2202	M 22KOHM, 1/10W	
R1369	ERJ3GEYJ102V	M 1K OHM, J,1/16W	
R1370	ERJ6ENF6801	M 6.8KOHM, 1/10W	
R1372	ERJ3GEYJ102V	M 1K OHM, J,1/16W	
R1383	EXB28V220J	RESISTOR ARRAY	
R1384	EXB28V220J	RESISTOR ARRAY	
R1385	EXB28V102JX	RESISTOR ARRAY	
R1386	EXB28V220J	RESISTOR ARRAY	
R1390	ERJ2GEJ101X	M 100 OHM, 0.063W	
R1391	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1392	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1394	D1HG2208A002	RESISTOR	
R1401	EXB28V220J	RESISTOR ARRAY	
R1402	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1403	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1404	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1405	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1407	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1408	ERJ2GEJ331X	M 330OHM, 0.063W	
R1409	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1410	ERJ2GEJ331X	M 330OHM, 0.063W	
R1411	ERJ6GEYJ122V	M 1.2KOHM, J,1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R1412	ERJ6ENF1002	M 10KOHM, 1/10W	
R1413	ERJ6ENF1002	M 10KOHM, 1/10W	
R1419	ERJ2GEJ473X	M 47K OHM, 0.063W	
R1420	ERJ2GEJ473X	M 47K OHM, 0.063W	
R1421	ERJ2GEJ473X	M 47K OHM, 0.063W	
R1426	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1427	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1430	ERJ1TYJ221U	M 220 OHM, 1W	
R1431	ERJ1TYJ221U	M 220 OHM, 1W	
R1434	ERJ3GEYJ272V	M 2.7KOHM, J,1/16W	
R1435	ERJ3GEYJ272V	M 2.7KOHM, J,1/16W	
R1436	ERJ3GEYJ272V	M 2.7KOHM, J,1/16W	
R1437	ERJ3GEYJ272V	M 2.7KOHM, J,1/16W	
R1438	ERJ3GEYJ272V	M 2.7KOHM, J,1/16W	
R1441	ERJ2GEJ104X	M100K OHM, 0.063W	
R1442	ERJ2GEJ104X	M100K OHM, 0.063W	
R1443	ERJ3GEYJ220V	M 22 OHM, J,1/16W	
R1444	ERJ3GEY0R00V	M 0 OHM, J,1/16W	
R1445	ERJ3GEY0R00V	M 0 OHM, J,1/16W	
R1446	ERJ3GEYJ220V	M 22 OHM, J,1/16W	LB20NT**
R1447	ERJ2GEJ560	M 560 OHM, 0.063W	
R1448	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1449	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1450	ERJ6ENF75R0V	M 75 OHM, 1/10W	
R1451	ERJ3GEYJ222V	M 2.2KOHM, J,1/16W	
R1453	ERJ3GEYJ222V	M 2.2KOHM, J,1/16W	
R1454	ERJ3GEYJ274V	M 270KOHM, J,1/16W	
R1455	ERJ3GEYJ473V	M 47KOHM, J,1/16W	
R1471	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1472	ERJ3GEYJ101V	M 100 OHM, J,1/16W	
R1501	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1502	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1503	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1505	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1510	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1511	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1512	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1513	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1514	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1515	ERJ3GEYJ561V	M 560 OHM, J,1/16W	
R1516	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1517	ERJ3GEYJ473V	M 47KOHM, J,1/16W	
R1518	ERJ3GEYJ473V	M 47KOHM, J,1/16W	
R1519	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1520	ERJ3GEYJ473V	M 47KOHM, J,1/16W	
R1521	ERJ6GEYJ472V	M 4.7KOHM, J,1/10W	
R1522	ERJ6GEYJ472V	M 4.7KOHM, J,1/10W	
R1523	ERJ3GEYJ472V	M 4.7KOHM, J,1/16W	
R1524	ERJ3GEYJ331V	M 330 OHM, J,1/16W	
R1525	ERJ3GEYJ331V	M 330 OHM, J,1/16W	
R1526	ERJ3GEYJ331V	M 330 OHM, J,1/16W	
R1527	ERJ3GEYJ222V	M 2.2KOHM, J,1/16W	
R1528	ERJ2GEJ681X	M 680 OHM, 0.063W	
R1530	ERJ3GEYJ153V	M 15KOHM, J,1/16W	
R1531	ERJ3GEYJ562V	M 5.6KOHM, J,1/16W	
R1532	ERJ3GEYJ153V	M 15KOHM, J,1/16W	
R1533	ERJ3GEYJ562V	M 5.6KOHM, J,1/16W	
R1534	ERJ3GEYJ153V	M 15KOHM, J,1/16W	
R1535	ERJ3GEYJ562V	M 5.6KOHM, J,1/16W	
R1536	ERJ3GEYJ103V	M 10KOHM, J,1/16W	
R1537	ERJ3GEYJ332V	M 3.3KOHM, J,1/16W	
R1539	ERJ3GEYJ122V	M 1.2KOHM, J,1/16W	
R1542	ERJ3GEYJ124V	M 120KOHM, J,1/16W	LB20NT**, LB20**, LB20V**
R1543	ERJ3GEYJ154V	M 150KOHM, J,1/16W	LB20NT**, LB20**, LB20V**
R1544	ERJ3GEYJ102V	M 1K OHM, J,1/16W	LB20NT**, LB20**, LB20V**
R1548	ERJ3GEYJ563	M 56KOHM, J,1/16W	LB20NT**, LB20**, LB20V**

Ref. No.	Part No.	Part Name & Description	Remarks
R1549	ERJ3GEYJ154V	M 150KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1552	ERJ3GEYJ333V	M 33K OHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1554	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1555	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1556	ERJ3GEYJ103V	M 10KOHM, J, 1/16W	LB20NT**, LB20**, LB20V**
R1569	D1HG2208A002	RESISTOR	
R1570	D1HG2208A002	RESISTOR	
R1571	D1HG2208A002	RESISTOR	
R1574	D1HG2208A002	RESISTOR	
R1575	D1HG2208A002	RESISTOR	
R1578	J0JCC0000244	FILTER	
R1579	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	
R1580	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	
R1581	ERJ2GEJ331X	M 330 OHM, 0.063W	
R1582	ERJ2GEJ331X	M 330 OHM, 0.063W	
R1583	ERJ2GEJ331X	M 330 OHM, 0.063W	
R1584	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1585	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1586	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	
R1587	ERJ2GEJ221X	M 220 OHM, 0.063W	
R1588	ERJ2GEJ221X	M 220 OHM, 0.063W	
R1589	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1590	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1591	ERJ2GEJ221X	M 220 OHM, 0.063W	
R1592	ERJ2GEJ272X	M2.7K OHM, 0.063W	
R1593	ERJ2GEJ101X	M 100 OHM, 0.063W	
R1595	D1HG1038A002	RESISTOR	
R1598	EXB28V103JX	RESISTOR ARRAY	
R1599	EXB28V103JX	RESISTOR ARRAY	
R1600	D1HG2208A002	RESISTOR	
R1603	EXB28V220J	RESISTOR ARRAY	
R1604	EXB28V220J	RESISTOR ARRAY	
R1605	D1HG2208A002	RESISTOR	
R1607	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1608	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1609	ERJ2GEJ331X	M 330OHM, 0.063W	
R1610	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1611	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1612	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1613	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1614	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1616	D1HG2208A002	RESISTOR	
R1619	D1HG2208A002	RESISTOR	
R1620	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1621	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1622	ERJ3GEYJ180V	M 18 OHM, J, 1/16W	
R1623	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1626	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	
R1628	ERJ2GEJ681X	M 680 OHM, 0.063W	
R1631	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20S**
R1632	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**, LB20**, LB20V**
R1633	D1HG5608A002	RESISTOR	
R1635	D1HG5608A002	RESISTOR	
R1637	D1HG5608A002	RESISTOR	
R1639	D1HG5608A002	RESISTOR	
R1641	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1642	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1645	ERJ2GEJ220X	M 22 OHM, 0.063W	LB20NT**
R1646	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1647	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1650	EXB28V103JX	RESISTOR ARRAY	
R1652	ERJ2GEJ220X	M 22 OHM, 0.063W	ERJ2RMJ220X

Ref. No.	Part No.	Part Name & Description	Remarks
R1653	J0JCC0000238	FILTER	LB20NT**, LB20**, LB20V**
	J0JCC0000168	FILTER	LB20S**
R1654	J0JCC0000238	FILTER	LB20NT**, LB20**, LB20V**
	J0JCC0000168	FILTER	LB20S**
R1655	J0JCC0000238	FILTER	LB20NT**, LB20**, LB20V**
	J0JCC0000168	FILTER	LB20S**
R1656	ERJ2GEJ681X	M 680 OHM, 0.063W	
R1657	ERJ2GEJ681X	M 680 OHM, 0.063W	
R1661	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1662	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	
R1663	ERJ2GEJ221X	M 220 OHM, 0.063W	
R1664	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1665	ERJ2GEJ472X	M4.7K OHM, 0.063W	
R1666	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1667	ERJ2GEJ101X	M 100 OHM, 0.063W	
R1668	ERJ3GEYJ562V	M 5.6KOHM, J, 1/16W	
R1669	ERJ3GEYJ392	M 3.9KOHM, J, 1/16W	
R1672	ERJ2GEJ103X	M 10K OHM, 0.063W	
R1673	ERJ2GEJ562X	M5.6K OHM, 0.063W	
R1674	ERJ6GEYJ100V	M 10 OHM, J, 1/10W	
R1675	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1676	ERJ6ENF2202	M 22K OHM, 1/10W	
R1677	ERJ2GEJ220X	M 22 OHM, 0.063W	
R1678	D1HG1038A002	RESISTOR	LB20**, LB20S**, LB20V**
R1679	D1HG1038A002	RESISTOR	LB20**, LB20S**, LB20V**
R1680	D1HG1038A002	RESISTOR	LB20**, LB20S**, LB20V**
R1681	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20**, LB20S**, LB20V**
R1682	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20**, LB20S**, LB20V**
R1683	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20**, LB20S**, LB20V**
R1684	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1685	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1689	ERJ2GEOROOX	M 0 OHM, 0.0063W	
R1691	ERJ2GEJ102X	M 1K OHM, 0.063W	
R1692	ERJ1TYJ221U	M 220 OHM, 1W	
R1801	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1802	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1803	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1804	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1806	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1807	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1808	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1809	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1810	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1816	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	LB20NT**
R1819	ERJ3GEYJ330V	M 33 OHM, J, 1/16W	LB20NT**
R1820	ERJ3GEY0R00V	M 0 OHM, J, 1/16W	LB20NT**
R1821	ERJ3GEY0R00V	M 0 OHM, J, 1/16W	LB20NT**
R1822	ERJ3GEYJ680V	M 68 OHM, J, 1/16W	LB20NT**
R1834	ERJ2GEJ680X	M 68 OHM, 0.063W	LB20NT**
R1839	ERJ2GEOROOX	M 0 OHM, 0.063W	LB20NT**
R1843	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1846	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1847	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1848	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1850	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1851	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1855	ERJ2GEJ220X	M 22 OHM, 0.063W	LB20NT**
R1859	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
R1860	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1863	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1864	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1865	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1866	ERJ2GEJ680X	M 68 OHM, 0.063W	LB20NT**
R1870	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1872	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1873	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1875	ERJ3GEYR000V	M 0 OHM, J, 1/16W	LB20NT**
R1876	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1877	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1878	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1879	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1880	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1881	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1882	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1885	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1888	ERJ2GEJ101X	M 100 OHM, 0.063W	LB20NT**
R1889	ERJ2GEJ101X	M 100 OHM, 0.063W	LB20NT**
R1890	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1891	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1892	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1893	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1894	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1895	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1897	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1898	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1901	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1902	ERJ6ENF4020	M 402 OHM, 1/10W	LB20NT**
R1903	ERJ6ENF1001V	M 1KOHM, 1/10W	LB20NT**
R1904	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1905	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1906	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1907	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1908	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1909	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1910	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1912	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1913	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1914	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1915	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1916	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1917	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1918	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1919	EXB28V104JX	RESISTOR ARRAY	LB20NT**
R1920	EXB28V472JX	RESISTOR ARRAY	LB20NT**
R1922	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1923	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1925	EXB28V103JX	RESISTOR ARRAY	LB20NT**
R1926	ERJ3GEYJ473V	M 47KOHM, J, 1/16W	LB20NT**
R1927	ERJ3GEYJ473V	M 47KOHM, J, 1/16W	LB20NT**
R1928	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	LB20NT**
R1929	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	LB20NT**
R1931	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	LB20NT**
R1932	ERJ2GE0R00X	M 0 OHM, 0.063W	LB20NT**
R1933	ERJ2GEJ105X	M 1M OHM, 0.063W	LB20NT**
R1934	ERJ2GEJ820X	M 82 OHM, 0.063W	LB20NT**
R1935	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1937	ERJ2GEJ103X	M 10K OHM, 0.063W	LB20NT**
R1941	ERJ3GEYJ220V	M 22 OHM, J, 1/16W	LB20NT**
R1942	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1945	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1946	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1947	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1948	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1949	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1950	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1951	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1952	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1953	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1954	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1955	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1956	ERJ2GEJ220X	M 22 OHM, 0.063W	LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
R1957	ERJ2GEJ220X	M 22 OHM, 0.063W	LB20NT**
R1958	EXB28V100J	RESISTOR ARRAY	LB20NT**
R1959	EXB28V220J	RESISTOR ARRAY	LB20NT**
R1960	EXB28V220J	RESISTOR ARRAY	LB20NT**
R2001	ERJ3GEYJ100V	M 10 OHM, J, 1/16W	
R2002	ERJ3GEYJ682V	M 6.8KOHM, J, 1/16W	
R2003	ERJ3GEYJ152V	M 1.5KOHM, J, 1/16W	
R2004	ERJ3GEYJ332V	M 3.3KOHM, J, 1/16W	
R2005	ERJ3GEYJ333V	M 33KOHM, J, 1/16W	
R2006	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2007	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2008	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2009	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2010	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2011	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2012	ERJ3GEYJ101V	M 100 OHM, J, 1/16W	
R2013	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R2014	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R2015	ERJ3GEYJ331V	M 330 OHM, J, 1/16W	
R2016	ERJ3GEYJ121	M 120 OHM, J, 1/16W	
R2017	ERJ3GEYJ151V	M 150 OHM, J, 1/16W	
R2018	ERJ3GEYJ472V	M 4.7KOHM, J, 1/16W	
R2019	ERJ3GEYJ470V	M 47 OHM, J, 1/16W	
R2020	ERJ3GEYJ102V	M 1K OHM, J, 1/16W	
R2022	ERJ3GEYJ121	M 120 OHM, J, 1/16W	
R2023	ERJ3GEYJ151V	M 150 OHM, J, 1/16W	
R2024	ERJ3GEYJ102V	M 1K OHM, J, 1/16W	
R2025	ERJ12YJ271U	M 270 OHM, 1/2W	
R3001	ERJ3GEYJ100V	M 10 OHM, J, 1/16W	
R3002	ERJ3EKF6801V	M 6.8KOHM, 1/16W	
R3004	ERJ3EKF2201	M 2.2KOHM, 1/16W	
R3005	ERJ3EKF1001V	M 1K OHM, 1/16W	
R3006	ERJ3EKF1002V	M 10KOHM, 1/16W	
R3007	ERJ3EKF1003V	M 100KOHM, 1/16W	
R3008	ERJ3GEYJ100V	M 10 OHM, J, 1/16W	
R3009	ERJ3EKF2201	M 2.2KOHM, 1/16W	
R3010	ERJ3EKF1001V	M 1K OHM, 1/16W	
R3011	ERJ3EKF2201	M 2.2KOHM, 1/16W	
R3012	ERJ3EKF1003	M 100KOHM, 1/16W	
R9101	ERDS1TJ474	C 4.7KOHM, J, 1/2W	▲
R9102	D0A1825JA015	RESISTOR	▲
R9601	ERX2SJ47	M 0.47OHM, J, 2W	
R9630	ERJ14YJ3R3	M 3.3 OHM, J, 1/4W	
R9631	ERJ8GEYJ220V	M 22 OHM, J, 1/8W	
R9632	ERJ14YJ5R6U	M 5.6 OHM, J, 1/4W	
R9633	ERJ8GEYJ100V	M 10 OHM, J, 1/8W	
R9634	ERJ8GEYJ120	M 12 OHM, J, 1/8W	
R9636	ERJ14YJ3R3	M 3.3 OHM, J, 1/4W	
R9637	ERJ8GEYJ220V	M 22 OHM, J, 1/8W	
R9638	ERJ14YJ5R6U	M 5.6 OHM, J, 1/4W	
R9639	ERJ8GEYJ100V	M 10 OHM, J, 1/8W	
R9640	ERJ8GEYJ120	M 12 OHM, J, 1/8W	
R9653	D0XGR22KA001	RESISTOR	
		[CAPACITORS]	
C1001	EEEHB0J221UP	E 330UF, 6.3V	
C1002	ECJ0EB1C103K	C 0.01UF, 16V	
C1003	EEEHB0J221UP	E 330UF, 6.3V	
C1004	ECJ0EB1C103K	C 0.01UF, 16V	
C1005	EEEHB0J221UP	E 330UF, 6.3V	
C1006	ECJ0EB1C103K	C 0.01UF, 16V	
C1007	ECJ0EF1C104Z	C 0.1UF, 16V	
C1008	ECJ1VB1H472K	C 4700PF, K, 50V	
C1009	ECJ1VF1C105Z	C 1UF, Z, 16V	
C1010	EEEHB0J330R	E 33UF, 6.3V	
C1011	ECJ0EF1C104Z	C 0.1UF, 16V	
C1012	EEEHB0J330R	E 33UF, 6.3V	
C1013	F2G1A101A029	CAPACITOR	
C1014	ECJ0EF1C104Z	C 0.1UF, 16V	
C1015	ECJ0EF1C104Z	C 0.1UF, 16V	
C1016	ECJ0EB1C103K	C 0.01UF, 16V	
C1017	ECJ1VF1E104Z	C 0.1UF, Z, 25V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1018	ECJ0EB1C103K	C 0.01UF, 16V	
C1019	ECJ0EB1H102K	C 1000PF, 50V	
C1021	ECJ0EF1C104Z	C 0.1UF, 16V	
C1022	ECJ0EB1C103K	C 0.01UF, 16V	
C1023	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1024	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1027	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1029	ECJ0EF1C104Z	C 0.1UF, 16V	
C1032	ECJ0EF1C104Z	C 0.1UF, 16V	
C1033	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1035	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1036	EEHHB0J330R	E 33UF, 6.3V	
C1037	ECJ0EB1C103K	C 0.01UF, 16V	
C1038	EEHHB0J330R	E 33UF, 6.3V	
C1039	ECJ0EB1C103K	C 0.01UF, 16V	
C1040	EEHHB0J330R	E 33UF, 6.3V	
C1041	ECJ0EB1C103K	C 0.01UF, 16V	
C1047	ECJ2YF1C225Z	C 2.2UF, Z, 16V	
C1048	ECJ1VB1H102K	C 1000PF, K, 50V	
C1049	ECJ2YF1C225Z	C 2.2UF, Z, 16V	
C1050	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1051	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1052	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1053	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1054	ECJ0EF1C104Z	C 0.1UF, 16V	
C1058	F2G0J4700010	CAPACITOR	
C1072	F2G1C4700014	CAPACITOR	
C1075	F2G1C1000013	CAPACITOR	
C1076	ECJ2FF1A106Z	C 10UF, 10V	
C1077	ECJ0EF1C104Z	C 0.1UF, 16V	
C1078	ECJ0EF1C104Z	C 0.1UF, 16V	
C1079	ECJ0EB1C103K	C 0.01UF, 16V	
C1080	ECJ2FF1A106Z	C 10UF, 10V	
C1081	F2G1C1000013	CAPACITOR	
C1082	ECJ0EF1C104Z	C 0.1UF, 16V	
C1083	ECJ0EF1C104Z	C 0.1UF, 16V	
C1084	ECJ2YF1C225Z	C 2.2UF, Z, 16V	
C1085	ECJ0EF1C104Z	C 0.1UF, 16V	
C1086	ECJ0EB1C103K	C 0.01UF, 16V	
C1087	ECJ0EF1C104Z	C 0.1UF, 16V	
C1088	ECJ0EF1C104Z	C 0.1UF, 16V	
C1089	ECJ0EF1C104Z	C 0.1UF, 16V	
C1090	ECJ0EF1C104Z	C 0.1UF, 16V	
C1091	ECJ0EF1C104Z	C 0.1UF, 16V	
C1092	ECJ0EF1C104Z	C 0.1UF, 16V	
C1093	ECJ0EB1H102K	C 1000PF, 50V	
C1094	EEHHB0G101R	E 100UF, 4V	
C1095	ECJ0EF1C104Z	C 0.1UF, 16V	
C1096	ECJ0EF1C104Z	C 0.1UF, 16V	
C1097	ECJ0EF1C104Z	C 0.1UF, 16V	
C1098	ECJ0EF1C104Z	C 0.1UF, 16V	
C1100	ECJ3YF1C475Z	C 4.7UF, Z, 16V	LB20NT**, LB20**, LB20V**
C1101	ECJ3YF1C475Z	C 4.7UF, Z, 16V	LB20NT**, LB20**, LB20V**
C1102	ECJ0EF1C104Z	C 0.1UF, 16V	
C1104	F2G1C4700014	CAPACITOR	
C1105	ECJ0EB1H102K	C 1000PF, 50V	
C1107	ECJ0EF1C104Z	C 0.1UF, 16V	
C1108	ECJ0EF1C104Z	C 0.1UF, 16V	
C1109	ECJ1VB1C823K	C 0.82UF, 16V	
C1110	ECJ1VB1H822K	C 8200PF, K, 50V	
C1113	ECJ0EB1C103K	C 0.01UF, 16V	
C1114	ECJ0EF1C104Z	C 0.1UF, 16V	
C1115	ECJ0EF1C104Z	C 0.1UF, 16V	
C1121	ECJ0EF1C104Z	C 0.1UF, 16V	
C1122	ECJ1VC1H150J	C 15PF, J, 50V	
C1123	ECJ0EF1C104Z	C 0.1UF, 16V	
C1125	ECJ0EF1C104Z	C 0.1UF, 16V	
C1126	ECJ1VC1H150J	C 15PF, J, 50V	
C1127	ECJ0EF1C104Z	C 0.1UF, 16V	
C1128	EEFC0D0101R	CAPACITOR	

Ref. No.	Part No.	Part Name & Description	Remarks
C1129	ECJ1VB1H102K	C 1000PF, K, 50V	
C1130	ECJ1VB1H102K	C 1000PF, K, 50V	
C1132	ECJ2YF1C225Z	C 2.2UF, Z, 16V	
C1133	ECJ0EF1C104Z	C 0.1UF, 16V	
C1135	ECJ0EF1C104Z	C 0.1UF, 16V	
C1137	EEHHB0G101R	E 100UF, 4V	
C1138	ECJ0EF1C104Z	C 0.1UF, 16V	
C1139	ECJ0EF1C104Z	C 0.1UF, 16V	
C1140	ECJ0EF1C104Z	C 0.1UF, 16V	
C1141	ECJ2YF1C225Z	C 2.2UF, Z, 16V	
C1143	F2G1C4700014	CAPACITOR	
C1145	ECJ0EF1C104Z	C 0.1UF, 16V	
C1146	F2G1C4700014	CAPACITOR	
C1149	ECJ0EF1C104Z	C 0.1UF, 16V	
C1150	ECJ0EF1C104Z	C 0.1UF, 16V	
C1152	ECJ0EF1C104Z	C 0.1UF, 16V	
C1154	ECJ0EF1C104Z	C 0.1UF, 16V	
C1168	ECJ0EF1C104Z	C 0.1UF, 16V	
C1172	ECJ0EF1C104Z	C 0.1UF, 16V	
C1178	ECJ0EF1C104Z	C 0.1UF, 16V	
C1185	ECJ0EF1C104Z	C 0.1UF, 16V	
C1187	F2G0J4700010	CAPACITOR	
C1189	ECJ0EF1C104Z	C 0.1UF, 16V	
C1199	F2G0J4700010	CAPACITOR	
C1200	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1201	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1202	ECJ0EF1C104Z	C 0.1UF, 16V	
C1206	ECJ0EF1C104Z	C 0.1UF, 16V	
C1207	ECJ0EF1C104Z	C 0.1UF, 16V	
C1208	ECJ0EF1C104Z	C 0.1UF, 16V	
C1209	ECJ0EF1C104Z	C 0.1UF, 16V	
C1210	ECJ1VF1H333Z	C 0.033UF, 50V	
C1212	ECJ0EF1C104Z	C 0.1UF, 16V	
C1213	ECJ0EF1C104Z	C 0.1UF, 16V	
C1215	ECJ0EF1C104Z	C 0.1UF, 16V	
C1216	ECJ0EF1C104Z	C 0.1UF, 16V	
C1217	ECJ1VC1H471J	C 470PF, J, 50V	
C1218	ECJ0EF1C104Z	C 0.1UF, 16V	
C1219	ECJ1VC1H100C	C 10PF, 50V	
C1220	ECJ0EF1C104Z	C 0.1UF, 16V	
C1221	ECJ1VC1H100C	C 10PF, 50V	
C1222	ECJ0EF1C104Z	C 0.1UF, 16V	
C1223	ECJ0EF1C104Z	C 0.1UF, 16V	
C1224	F2G0J4700010	CAPACITOR	
C1225	ECJ0EF1C104Z	C 0.1UF, 16V	
C1229	ECJ0EF1C104Z	C 0.1UF, 16V	
C1230	EEHHB0G101R	E 100UF, 4V	
C1242	F2G0J1010013	CAPACITOR	
C1243	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1244	F2G1E3300010	CAPACITOR	
C1245	F2G1E3300010	CAPACITOR	
C1246	ECJ0EB1C103K	C 0.01UF, 16V	
C1247	ECJ0EF1C104Z	C 0.1UF, 16V	
C1248	ECJ0EB1C103K	C 0.01UF, 16V	
C1249	ECJ0EF1C104Z	C 0.1UF, 16V	
C1250	ECJ0EB1C103K	C 0.01UF, 16V	
C1251	ECJ0EF1C104Z	C 0.1UF, 16V	
C1252	F1J1E105A197	CAPACITOR	
C1253	ECJ0EF1C104Z	C 0.1UF, 16V	
C1254	ECJ0EF1C104Z	C 0.1UF, 16V	
C1255	ECJ0EF1C104Z	C 0.1UF, 16V	
C1256	ECJ0EF1C104Z	C 0.1UF, 16V	
C1257	ECJ0EF1C104Z	C 0.1UF, 16V	
C1258	ECJ0EF1C104Z	C 0.1UF, 16V	
C1259	ECJ0EF1C104Z	C 0.1UF, 16V	
C1260	ECJ0EF1C104Z	C 0.1UF, 16V	
C1261	ECJ0EF1C104Z	C 0.1UF, 16V	
C1262	ECJ0EF1C104Z	C 0.1UF, 16V	
C1263	ECJ0EF1C104Z	C 0.1UF, 16V	
C1264	ECJ0EF1C104Z	C 0.1UF, 16V	
C1265	ECJ0EF1C104Z	C 0.1UF, 16V	
C1266	ECJ0EF1C104Z	C 0.1UF, 16V	
C1267	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1268	ECJ0EF1C104Z	C 0.1UF, 16V	
C1269	ECJ0EF1C104Z	C 0.1UF, 16V	
C1270	ECJ0EF1C104Z	C 0.1UF, 16V	
C1271	ECJ0EF1C104Z	C 0.1UF, 16V	
C1272	ECJ0EF1C104Z	C 0.1UF, 16V	
C1273	ECJ0EF1C104Z	C 0.1UF, 16V	
C1274	ECJ0EF1C104Z	C 0.1UF, 16V	
C1275	ECJ0EF1C104Z	C 0.1UF, 16V	
C1276	ECJ0EF1C104Z	C 0.1UF, 16V	
C1277	ECJ0EF1C104Z	C 0.1UF, 16V	
C1278	ECJ0EF1C104Z	C 0.1UF, 16V	
C1279	ECJ0EF1C104Z	C 0.1UF, 16V	
C1280	ECJ0EF1C104Z	C 0.1UF, 16V	
C1281	ECJ0EF1C104Z	C 0.1UF, 16V	
C1282	ECJ0EF1C104Z	C 0.1UF, 16V	
C1283	ECJ0EF1C104Z	C 0.1UF, 16V	
C1284	ECJ0EF1C104Z	C 0.1UF, 16V	
C1285	ECJ0EF1C104Z	C 0.1UF, 16V	
C1286	F2G1E3300010	CAPACITOR	
C1306	ECJ0EF1C104Z	C 0.1UF, 16V	
C1329	F1J1E105A197	CAPACITOR	
C1330	F1J1E105A197	CAPACITOR	
C1331	F1J1E105A197	CAPACITOR	
C1332	F2G1E3300022	CAPACITOR	
C1333	F2G1E3300010	CAPACITOR	
C1334	F2G1E3300010	CAPACITOR	
C1335	F2G1A3300007	CAPACITOR	
C1336	F2G1A3300022	CAPACITOR	
C1337	F2G1A3300007	CAPACITOR	
C1341	ECJ1VF1C105Z	C 1UF, Z, 16V	
C1342	ECJ1VF1C105Z	C 1UF, Z, 16V	
C1343	ECJ1VF1C105Z	C 1UF, Z, 16V	
C1353	F4D272750005	CAPACITOR	
C1354	F4D272750005	CAPACITOR	
C1355	F4D272750005	CAPACITOR	
C1356	F4D272750005	CAPACITOR	
C1357	F4D272750005	CAPACITOR	
C1360	ECJ3YF1C475Z	C 4.7UF, Z, 16V	LB20NT**, LB20**, LB20V**
C1364	ECJ1VF1E104Z	C 0.1UF, Z, 25V	LB20NT**, LB20**, LB20V**
C1500	ECJ0EF1C104Z	C 0.1UF, 16V	
C1501	ECJ0EF1C104Z	C 0.1UF, 16V	
C1502	ECJ0EF1C104Z	C 0.1UF, 16V	
C1503	ECJ0EF1C104Z	C 0.1UF, 16V	
C1504	ECJ0EF1C104Z	C 0.1UF, 16V	
C1505	ECJ0EF1C104Z	C 0.1UF, 16V	
C1506	ECJ0EF1C104Z	C 0.1UF, 16V	
C1507	ECJ0EF1C104Z	C 0.1UF, 16V	
C1508	ECJ0EF1C104Z	C 0.1UF, 16V	
C1509	ECJ0EF1C104Z	C 0.1UF, 16V	
C1510	ECJ0EF1C104Z	C 0.1UF, 16V	
C1511	ECJ0EF1C104Z	C 0.1UF, 16V	
C1512	ECJ0EF1C104Z	C 0.1UF, 16V	
C1513	ECJ0EF1C104Z	C 0.1UF, 16V	
C1514	ECJ0EF1C104Z	C 0.1UF, 16V	
C1515	ECJ0EF1C104Z	C 0.1UF, 16V	
C1516	ECJ0EF1C104Z	C 0.1UF, 16V	
C1517	ECJ0EB1C103K	C 0.01UF, 16V	
C1518	ECJ0EF1C104Z	C 0.1UF, 16V	
C1519	ECJ0EF1C104Z	C 0.1UF, 16V	
C1520	ECJ0EF1C104Z	C 0.1UF, 16V	
C1521	ECJ0EF1C104Z	C 0.1UF, 16V	
C1522	ECJ0EF1C104Z	C 0.1UF, 16V	
C1523	ECJ0EF1C104Z	C 0.1UF, 16V	
C1524	ECJ0EF1C104Z	C 0.1UF, 16V	
C1525	ECJ0EF1C104Z	C 0.1UF, 16V	
C1526	ECJ0EF1C104Z	C 0.1UF, 16V	
C1527	ECJ0EF1C104Z	C 0.1UF, 16V	
C1528	ECJ0EF1C104Z	C 0.1UF, 16V	
C1529	ECJ0EF1C104Z	C 0.1UF, 16V	
C1530	ECJ0EF1C104Z	C 0.1UF, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C1531	ECJ0EF1C104Z	C 0.1UF, 16V	
C1532	ECJ0EF1C104Z	C 0.1UF, 16V	
C1533	ECJ0EF1C104Z	C 0.1UF, 16V	
C1534	ECJ0EF1C104Z	C 0.1UF, 16V	
C1535	ECJ0EF1C104Z	C 0.1UF, 16V	
C1536	ECJ0EF1C104Z	C 0.1UF, 16V	
C1538	ECJ0EF1C104Z	C 0.1UF, 16V	
C1539	F1J1E105A197	CAPACITOR	
C1541	F1J0J106A013	CAPACITOR	
C1542	F2G0J4700010	CAPACITOR	
C1543	F2G1A221A030	CAPACITOR	
C1544	ECJ0EF1C104Z	C 0.1UF, 16V	
C1601	ECJ1VF1E104Z	C 0.1UF, Z, 25V	
C1602	ECJ0EF1C104Z	C 0.1UF, 16V	
C1603	ECJ0EF1C104Z	C 0.1UF, 16V	
C1604	ECJ0EF1C104Z	C 0.1UF, 16V	
C1605	ECJ0EF1C104Z	C 0.1UF, 16V	
C1606	ECJ0EF1C104Z	C 0.1UF, 16V	
C1607	ECJ0EF1C104Z	C 0.1UF, 16V	
C1608	ECJ0EF1C104Z	C 0.1UF, 16V	
C1609	ECJ0EF1C104Z	C 0.1UF, 16V	
C1610	ECJ0EF1C104Z	C 0.1UF, 16V	
C1611	ECJ0EF1C104Z	C 0.1UF, 16V	
C1612	ECJ0EF1C104Z	C 0.1UF, 16V	
C1613	ECJ0EF1C104Z	C 0.1UF, 16V	
C1614	ECJ0EF1C104Z	C 0.1UF, 16V	
C1615	ECJ0EF1C104Z	C 0.1UF, 16V	
C1616	ECJ0EF1C104Z	C 0.1UF, 16V	
C1617	ECJ0EF1C104Z	C 0.1UF, 16V	
C1618	ECJ0EF1C104Z	C 0.1UF, 16V	
C1619	ECJ0EF1C104Z	C 0.1UF, 16V	
C1620	ECJ0EF1C104Z	C 0.1UF, 16V	
C1621	ECJ0EF1C104Z	C 0.1UF, 16V	
C1622	ECJ0EF1C104Z	C 0.1UF, 16V	
C1623	ECJ0EF1C104Z	C 0.1UF, 16V	
C1624	ECJ0EF1C104Z	C 0.1UF, 16V	
C1629	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1630	ECJ1VF1A105Z	C 1UF, Z, 50V	
C1631	ECJ0EF1C104Z	C 0.1UF, 16V	
C1632	ECJ0EF1C104Z	C 0.1UF, 16V	
C1633	ECJ0EF1C104Z	C 0.1UF, 16V	
C1634	ECJ0EF1C104Z	C 0.1UF, 16V	
C1635	ECJ0EF1C104Z	C 0.1UF, 16V	
C1636	F2G0J4700010	CAPACITOR	LB20**, LB20S**, LB20V**
C1637	ECJ0EF1C104Z	C 0.1UF, 16V	
C1801	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1802	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1803	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1804	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1805	F2G0J4700010	CAPACITOR	LB20NT**
C1806	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1808	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1809	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1810	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1811	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1812	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1813	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1814	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1815	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1816	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1817	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1818	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1819	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1820	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1821	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1822	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1823	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1824	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1825	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1826	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1827	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**

Ref. No.	Part No.	Part Name & Description	Remarks
C1828	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1829	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1830	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1831	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1832	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1833	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1834	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1835	F2G0J4700010	CAPACITOR	LB20NT**
C1836	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1837	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1838	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1839	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1840	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1841	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1842	F2G0J4700010	CAPACITOR	LB20NT**
C1843	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1844	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1845	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1846	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1848	ECJ1VB1H103K	C 0.01UF, K, 50V	LB20NT**
C1849	ECJ1VC1H101J	C 100PF, J, 50V	LB20NT**
C1850	F2G0J4700010	CAPACITOR	LB20NT**
C1851	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1852	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1853	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1854	F2G0J1010013	CAPACITOR	LB20NT**
C1855	ECJ0EF0J105Z	C 100UF, 6.3V	LB20NT**
C1856	ECJ0EF0J105Z	C 100UF, 6.3V	LB20NT**
C1857	ECJ0EF0J105Z	C 100UF, 6.3V	LB20NT**
C1858	ECJ0EF0J105Z	C 100UF, 6.3V	LB20NT**
C1859	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1860	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1861	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1862	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1863	F2G0J4700010	CAPACITOR	LB20NT**
C1865	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1866	F2G0J4700010	CAPACITOR	LB20NT**
C1867	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1868	ECJ3YF1C475Z	C 4.7UF, Z, 16V	LB20NT**
C1869	F1J0J106A013	CAPACITOR	LB20NT**
C1870	F1J0J106A013	CAPACITOR	LB20NT**
C1871	ECJ0EF1C104Z	C 0.1UF, 16V	LB20NT**
C1872	F1J0J106A013	CAPACITOR	LB20NT**
C1873	F1J0J106A013	CAPACITOR	LB20NT**
C2001	ECJ3YF1C475Z	C 4.7UF, Z, 16V	
C2004	ECJ0EF1C104Z	C 0.1UF, 16V	
C2005	ECJ3YF1C475Z	C 4.7UF, Z, 16V	
C2007	ECJ0EF1C104Z	C 0.1UF, 16V	
C3001	ECJ3YF1C475Z	C 4.7UF, Z, 16V	
C3003	ECJ1VF1C104Z	C 0.1UF, Z, 16V	
C9101	ECQU2A334MLA	CAPACITOR	△
C9102	F1BAH1020016	CAPACITOR	△
C9103	F1BAH1020016	CAPACITOR	△
C9603	F0CZZ4740002	CAPACITOR	
C9610	F0C2E1050002	CAPACITOR	
C9617	F0C3C4720003	CAPACITOR	
C9618	F0C2J1540004	CAPACITOR	
C9619	F0C2J1540004	CAPACITOR	
[OTHERS]			
A1	K1MN30B00115	30P CONNECTOR	
A2	K1MN30B00114	30P CONNECTOR	
A3	K1MN30B00115	30P CONNECTOR	
A4	K1KA07BA0014	7P CONNECTOR	
A6	K1KA12BA0059	12P CONNECTOR	
A8	K1MN12B00070	12P CONNECTOR	
A9	K1KB05AA0065	5P CONNECTOR	
A10	K1KA02BA0047	2P CONNECTOR	
A11	K1KA02BA0047	2P CONNECTOR	
A12	K1KA02BA0047	2P CONNECTOR	
A13	K1MN50B00010	50P CONNECTOR	LB20NT**
A15	K1KA03BA0047	3P CONNECTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
A16	K1KA03BA0014	3P CONNECTOR	
A17	K1KA03BA0047	3P CONNECTOR	
A18	K1KA03BA0014	3P CONNECTOR	
A19	K1KA04BA0047	4P CONNECTOR	
A20	K1MN14A00081	14P CONNECTOR	LB20NT**, LB20**, LB20V**
S1	K1MN12B00137	12P CONNECTOR	
S2	K1KA05B00150	5P CONNECTOR	
WL1	K1KA80A00125	80P CONNECTOR	LB20NT**
WL2	K1MN50B00016	50P CONNECTOR	LB20NT**
CF1001	D4CC1103A037	THERMISTOR	
CF2001	D4CC1103A037	THERMISTOR	
F9101-1	EYF52BCY	FUSE HOLDER	
F9101-2	EYF52BCY	FUSE HOLDER	
F9101	K5D502BNA005	FUSE	△
JK1001	K1CB205B0003	S-VIDEO/VIDEO IN TERMINAL	
JK1002	K1CB208BA002	RS232 I/F TERMINAL	
JK1003	K2HA202B0025	AUDIO IN TERMINAL	
JK1004	K1FB115B0103	RGN IN 1 TERMINAL	
JK1005	K1FB115B0102	RGB IN 2/OUT TERMINAL	
JK9101	K2AH3B000021	AC INLET	△
PC2001	B3JB00000023	PHOTO COUPLER	
RM2001	B3RAD0000102	REMOTE CONTROL RECEIVER	
S9602	A9BZ00000010	SPARK GAP	
SW2001	EVQPLHA15	SWITCH	
SW2002	EVQPLHA15	SWITCH	
SW2003	EVQPLHA15	SWITCH	
SW3001	EVQWHA50K	SWITCH	
SW3002	EVQWHA50K	SWITCH	
SW9601	T115AR3U3	SWITCH	△
T9604	G4F2A0000001	TRANS	△
X1002	H0J270500045	CRYSTAL	
X1003	H0J983400016	CRYSTAL	
X1006	H1A6505B0006	CRYSTAL	LB20NT**, LB20**, LB20V**
	H1A4405B0009	CRYSTAL	LB20S**
X1801	H1A6605B0005	CRYSTAL	LB20NT**
X1802	H0J270500091	CRYSTAL	LB20NT**
Z9101	TJEA090	EARTH LUG	
RTL	TXANP03VJZ5	CIRCUIT BOARD K	
RTL	TNPA3595	CIRCUIT BOARD WL	LB20NT**
RTL	TXANP01VJZ5	CIRCUIT BOARD A	LB20NT**
	TXANP01PYKZ	CIRCUIT BOARD A	LB20**, LB20V**
	TXANP01PYMZ	CIRCUIT BOARD A	LB20S**
RTL	TNPA3597	CIRCUIT BOARD S2	
RTL	TNPA3596	CIRCUIT BOARD S1	
	TXANP02VJZ5A	POWER UNIT ASSY	
	TXANP05VJZ5	BALLAST UNIT ASSY	